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ABSTRACT

A 17-week professional experience program was undertaken to enable a college professor to: (1) attend and present a paper at the 14th World Conference of the International Council for Distance Education (ICDE) in Oslo, Norway, in December 1988; (2) gain first hand information about innovations in the use of telecommunications in the delivery of distance education programs; and (3) examine ways in which cooperative arrangements between institutions and groups in the preparation and delivery of distance education courses have been, and are being, developed. The report, a summary of site visits in Canada, England, Scotland, and West Germany, includes a brief outline of the program; a summary of the conference; descriptions of some of the many communications technologies used to deliver distance education in some of the institutions visited; and descriptions of cooperative ventures undertaken by some institutions. Twelve appendixes, which constitute more than half of the report, include flyers and information bulletins from the institutions visited, and a paper--"The Use of Electronic Mail in Distance Education" (Bruce Scriven)--which was presented at the ICDE Conference. (GL)

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ASPECTS OF DISTANCE EDUCATION IN EUROPE AND CANADA

A report on a professional experience program
August 6 to December 5, 1988

Bruce Scriven
Extension Services

1989

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BRISBANE COLLEGE OF ADVANCED EDUCATION

ASPECTS OF DISTANCE EDUCATION IN EUROPE AND CANADA

A report on a professional experience program

6 August 1988 to 5 December 1988

Bruce Scriven
Extension Services

1989

Letter of Transmission

Dr N Parsons
Director
Brisbane CAE
130 Victoria Park Road
KELVIN GROVE Qld 4059

Dear Dr Parsons

It is with pleasure that I submit this report of my Professional Experience Program, which, including a period of recreation leave, extended from 6 August to 3 December 1988.

As the report reveals, the experience proved both stimulating and rewarding both in relation to the knowledge gained and the professional contacts established. I am sure that these will prove beneficial both to me personally and the College generally in future years.

Yours sincerely

BRUCE SCRIVEN

Acknowledgements

I would like to acknowledge the following:

- Dr P Botsman, past Director of BCAE for his encouragement and support.

- The Professional Experience Program Committee and Council for approving my PEP proposal.

- The many people in institutions I visited who gave their valuable time to assist me and willingly provided information and guidance.

- Charlie McKavanagh of BCAE who willingly accepted extra responsibilities during my absence.

- Roy Lundin of BCAE who, in addition to accepting extra responsibilities during my absence, regularly kept me informed of important events via electronic mail which I was able to receive via mailboxes both at Simon Fraser University and on AOLIN (The Australian Open Learning Information Network).

Summary

My Professional Experience Program extended over a period of 17 weeks during 1988 and enabled me to achieve three objectives:

(a) to attend the 14th World Conference of the International Council for Distance Education in Oslo, Norway and to present a paper at this conference;

(b) to gain first hand information about innovations in the use of telecommunications in the delivery of distance education programs;

(c) to examine ways in which co-operative arrangements between institutions and groups involved in the preparation and delivery of distance education courses have been, and are being, developed.

Telecommunications are playing an increasingly important part in the delivery of both credit and non credit courses at the higher education level and a great variety of combinations of technologies have been, and are being used. However there are still relatively few courses, and even fewer complete programs leading to awards, that can be completed solely via telecommunications technologies. Rather are the new technologies being used to supplement more traditional techniques or as incentives to encourage academics to present courses in new ways.

There is no doubt that the most commonly used technique at present is that of audioteleconferencing, which is gradually being enhanced by the addition of audiographics (e.g. OPTEL). There are many reasons for the growth in popularity of audioteleconferencing, not the least of which is that it is cost effective and relatively easy to use. Initial capital costs for the installation of teleconferencing equipment are also relatively low and it is not essential that the very isolated students have access to specialised equipment.

One of the major impediments to further expansion of the use of telecommunications for the delivery of distance education at the higher education level is, however, staff resistance and it is essential that positive steps be taken to overcome this if the full potential of telecommunications is to be realised. Academic staff need to receive recognition from their colleagues and institutions, and probably be provided with some financial incentive, before they can be expected to become committed to using, or even trialling, new technologies. It is not sufficient to expect one or two committed academics to offer courses using a variety of approaches with the expectation that others will follow. A multi media delivery system generally places a considerable additional workload on academic staff and this needs to be recognised.

There is an increasing number of innovative technologies becoming available and the application of some, if not most, of these to distance education has been trialled, or is being trialled, somewhere. Unfortunately, however, even "successful" trials will not lead to rapid expansion or ready acceptance unless academic staff, and their institutions, can be convinced that the results achieved are worth the effort (and costs) expended.

The economic and social need for rationalisation in distance education, particularly as it relates to the costs involved in using new technologies, has led to the development of a variety of cooperative arrangements. The most effective of such arrangements are undoubtedly those that are encouraged and supported by separate funding arrangements.

This usually implies the establishment by governments of a separate autonomous or semi-autonomous body which is provided with its own funds to foster cooperative

activities. Typical examples include the Open Learning Agency (OLA) in British Columbia, Contact North in Ontario and TETRA in Newfoundland-Labrador.

Institutions which do not want to cooperate thereby miss out on certain funds and facilities or, alternatively, do not become involved at all in any of the activities being promoted by the new body. Voluntary cooperative arrangements between institutions are generally of a fairly minor nature, often temporary, and are readily seen not to have any significant impact on individual institutional autonomy.

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1. Objectives.

There were three specific objectives for this professional experience program.

(a) To attend the 14th World Conference of the International Council for Distance Education in Oslo, Norway and to present a paper at this conference.

(b) To gain first hand information about innovations in the use of tele-communications in the delivery of distance education programs.

(c) To examine the ways in which co-operative arrangements between institutions and groups involved in the preparation and delivery of distance education courses have been, and are being, developed.

The extent to which these objectives were accomplished will be evident from the remainder of this report which has been divided into the following sections.

- Program - a brief outline of my program.
- 14th World Conference of ICDE - a brief mention of this conference.
- Communications technologies
  - summarises some of the many communication techniques being used to deliver distance education in **some** of the institutions visited.
- Cooperative ventures
  - describes some of the cooperative ventures which have been undertaken with the expectation of providing more extensive, efficient and effective distance education delivery. Inevitably, however, there is some overlap between this and the previous section in the sense that some institutions visited could rightly be included in both sections.
- Other matters
  - provides some comments on a number of general matters relating to distance education provision.

• • •

2. Program.

In order to accomplish the above objectives a program of visits to institutions in Germany, England, Scotland and Canada was arranged to take place after attendance at the conference in Oslo. Planning for these visits commenced early in 1987 and involved considerable correspondence. As a result all major contacts had been arranged well in advance.

The PEP program was originally approved for a 12 week period but this was subsequently extended to 17 weeks by the incorporation of 5 weeks' recreation leave. This proved extremely useful because it provided additional time in which to make contact with others not on my original itinerary and permitted greater flexibility in the final timetabling of visits.

In order to limit travel and accommodation costs, travel through Europe was undertaken by campervan while travel across Canada was mostly by rail.

A complete schedule of visits appears as Appendix A.

Maps indicating the actual towns and cities visited appear in Appendix B. These serve to provide some idea of the amount of travelling involved and of the geographic spread of the institutions visited. (I would be very willing to provide helpful hints and assistance to any colleagues who may be planning any similar "tours" in the future!)

. . .

3. The 14th World Conference of the International Council for Distance Education.

The International Council for Distance Education (ICDE) holds a conference approximately every four years and brings together distance education practitioners from all over the world. The final report of the 14th Conference is not yet available (December 1988) but it would seem that there were approximately 600 participants from more than 50 countries. The book of conference papers comprises 458 pages and covers 112 selected papers although there were many more than this presented at the conference.

In addition to presenting a paper at the conference I was also chairperson of the regional group meeting involving distance educators from Australia and the South Pacific.

The paper that I presented was titled ***The Use of Electronic Mail in Distance Education.*** It was extremely well received and attracted considerable interest. The paper provided evidence that electronic mail could be used effectively and at relatively low cost to reduce the sense of isolation experienced by many external students by allowing them rapid communications with staff and other colleagues. It became clear, however, that the technology was not yet a viable proposition in many countries, including those in Europe, because of the telephone line charges involved. Many were envious of the structures developed in Australia to handle electronic mail (e.g. the Australian Open Learning Information Network - AOLIN) and of Australian Telecom's policy of permitting access to the national electronic mail network (Keylink) for the cost of a local call. It would seem that the fact that Australia continues to enjoy untimed local calls places telephone users at a distinct advantage over those in many other countries.

Other papers presented at the conference covered a variety of themes and clearly it was not possible to attend more than a fraction of them. In fact I concentrated on those I felt would be of particular relevance to my objectives and these covered the following themes:

- Media and communications technology
- Collaboration and credit transfer
- Continuing Education.

In some cases I was able to meet the authors of papers at their workplaces during my subsequent program of visits. Such visits provided ideal opportunities to follow up particular aspects and for the discussion of issues of mutual interest.

It is not appropriate in a report such as this to summarise all the relevant aspects of each paper, although some mention will be incorporated in the observations in following sections. Instead I list some of the more interesting papers which readers may wish to follow up at their leisure. All papers are to be found in the book of conference papers.

Sewart, D and Daniel J S (1988). *Developing Distance Education*, Oslo, ICDE.

Abe, Y. *Communications technology.*

Bartels, J and Shale, D. *Distance Education in federal states: a comparative analysis of Canada and West Germany.*

Bates, A W. *The potential and realities of using satellites for distance education in Western Europe.*

Black, J P et al. *Portable computers in distance education.*

Carl, D R and Densmore, B. *Introductory accounting on DUET - a comparative evaluation.*

Collins, V and Murphy, P. *A new adult student: learning by interactive satellite.*

Horlock, J. *Distance teaching and credit transfer.*

Laaser, W. *Some obstacles to implement (sic) new information technologies in distance education.*

Mitchell, B and Harrington, R. *The knowledge network. A cooperative distance education model using telecommunications technology.*

Roberts, J et al. *Contact North/Contact Nord: A model for distance education project administration.*

Rumble, G. *Economics in distance education; time for a change of direction?*

Wilson, K. *Developing distance education through institutional collaboration on courses - a faculty perspective.*

A copy of the paper I presented at the conference appears as Appendix L.

. . .

4. Communications technologies.

4.1 Introduction

There is no doubt that there is an increasing use of communications technologies throughout the world although there is still a reluctance on the part of many teaching academics to become involved. Although this is understandable - little, if any credit, is given for the often large amounts of extra work involved - it means that there is a great dearth of useful research in the area. It is true that some kinds of research are difficult to do - for example, "experimental" groups can sue institutions if their results are not up to expectations - but nevertheless there is still much that can be done. Too often it seems that interesting and innovative projects are implemented without a detailed procedural plan or without a comprehensive evaluation being undertaken. Similarly projects are commenced (often for political reasons) but flounder or are abandoned when funding is withdrawn (again often for political reasons) or a new "fad" must be tried, or a key person leaves. This situation is not, of course, confined to the field of distance education, but it certainly proves disconcerting both to those who become involved in projects and to those who are looking for some kind of guidance.

Despite these problems there is a large variety of approaches being adopted by institutions grappling with the problem of delivering their courses economically yet effectively to distant students. These approaches may be broadly classified according to the prime delivery mode:

- TV/video
- audio teleconferencing
- print materials

All of these may include a variety of enhancements such as data transmission, real time interaction or communication between computers (e.g. OPTEL), face to face presentations, etc.

Because many institutions may offer one course by one particular system while for another course a quite different approach will apply it seems appropropriate to select a number of institutions and indicate how they are approaching the problem of distance education delivery. This approach will also reveal to the reader how it is possible to integrate a variety of very different techniques into the one overall organisation.

Information included in what follows has been obtained from notes made during discussions as well as from publicity leaflets, handbooks, programs, papers and other materials willingly provided by many individuals. The interpretation of this wealth of information is my own and I trust that it accurately reflects the real situation.

4.2 **Memorial University of Newfoundland,** St. John's, Canada.

This institution offers distance education courses through its Division of Continuing Studies within the School of General and Continuing Studies and Extension. (The place of external studies within the academic structure of institutions and the names attached to it were as varied as the institutions themselves!)

Courses are offered by correspondence, teleconference, videotape or a combination of all three. Of the approximately 72 courses (or units in BCAE terminology) offered in any one semester approximately 50% involve significant use of teleconferencing and the other 50% are of the more traditional correspondence style using print based materials.

The teleconference system is "a dedicated audio system which connects more than 100 sites in some 60 communities in Newfoundland and Labrador. A central bridge is situated at the University's Medical School which offers a very extensive program of telemedicine to hospitals and health workers. The teleconferencing bridge is such that up to four different courses can be delivered at any one time. OPTEL system telewriters, which permit the sending of data between instructor and student, have been provided in more than 40 sites and another 50 systems have been ordered at a cost of about $10 000 each. In this system instructors use a pen to write on an electronic tablet and the message is instantaneously received at all sites and displayed on television screens in colour. (Dr. Roy Lundin's Communication and Information Technology Group have been experimenting with the OPTEL system in establishing links with China.)

Refer to Appendix H for additional information on the OPTEL system.

The main features of the Memorial University system are thus:

- a dedicated network i.e. sites can plug in at any time to any "conference" that is under way.
- emphasis on real time delivery and feedback
- ability to transmit and receive data e.g. drawings on a white board, pre-prepared diagrams, etc. at the same time as audio
- a very extensive system of study centres which are mainly situated in schools, hospitals or community centres.

I was advised that the all up running costs of this system are approximately $200/hour and that the network is in use 14 hours per day.

It should be noted that in this teaching model the instructor can be at any site and may or may not have a face to face group with whom to react.

Electronic mail has been tried but was not successful because very few modems were available.

Partly because of the success of this network funds of Cd$3.5 million will be provided over the next 5 years to expand and develop it further. These funds will be administered by a new organisation TETRA

(Teleconferencing and Educational Technology Research Agency) and will involve various business and community groups as well as education organisations.

Memorial University also offers "videotape courses". These comprise on- campus lectures which have been taped by an instructor and subsequently sent to off-campus centres where students meet as a class to view tapes. In some cases video tapes may be rented to students for viewing at home.

Distance Education Courses offered by Memorial are listed in their catalogue as

CC	:	Correspondence Course
TC	:	Teleconference Course
VT	:	Video-tape Course
L	:	Local instructor.

4.3 **Mount Saint Vincent University,** Halifax, Nova Scotia, Canada.

Mount Saint Vincent University offers distance education courses via its Distance University Education via Television (DUET) which is best described in its publicity leaflet:

Mount Saint Vincent University

166 Bedford Highway (902) 443-4450
Halifax
Nova Scotia
B3M 2J6

DUET

Distance University Education via Television

* Distance University Education via Television (DUET) broadcasts university courses to homes, offices and work places in Atlantic Canada.

* Students watch the course on television and participate in discussions or ask questions via a collect call telephone line.

* DUET is unique in Canada. It is the only university that broadcasts regularly scheduled classes in a live interactive television mode.

* Studies indicate that the academic performance of DUET students is equal to, or better than, on-campus students.

* DUET currently offers courses in Gerontology, Business Administration, and Home Economics. Curriculum varies each semester.

* DUET offers a certificate in Gerontology over a five year period.

* DUET broadcasts 24 hours per day in Dartmouth /Sackville and approximately 12 hours per day in Halifax.

* DUET broadcasts over the local educational channel and the Atlantic Satellite Network.

* Broadcasting began via microwave in January 1982 and moved to satellite in September 1983.

* Student enrollment doubled over the past year to a current registration of 230 students throughout Canada.

* The concentration of DUET students is in the Maritimes. DUET has students as far as Victoria, British Columbia.

* DUET provides production and broadcast services for Dalhousie University, Atlantic School of Theology, the Co-op College and other maritime institutions.

* DUET operates with a full-time staff of three employees and approximately 21 paid and volunteer student operators.

Producer	# of Staff	# of hrs/wk of Original Productions
ASN/ATV	175	18.5
CBC	300	15 (approx.)
DUET	3	25

Compiled by Kathi MacDonald

The following points should be noted

(a) Registrations for credit are small (230 students) although the total audience is very large.

(b) Transmission costs are minimal because of the local requirement that certain TV cable and satellite stations must devote a set proportion of their broadcasting time to education.

(c) Studio costs are minimal and involve one studio camera (often operated by a volunteer), one fixed camera over the instructor's desk and one remotely controlled camera which can be operated from the control room.

(d) All live programs are taped and are frequently replayed over the satellite network. Tapes may be borrowed by students in certain instances.

(e) No complete programs or awards are available through DUET.

(f) Very little use appears to be made by the viewing audience of the interactive facility and in the program I watched being transmitted live there were no questions from the viewing audience although there were some from the studio audience - which was a typical evening class of undergraduate students.

(g) Students who register with DUET for credit pay the same fees as on-campus students **plus** an additional service fee of Cd$35.

(h) Many staff seem reluctant to become involved because they see it as additional work with no compensation.

4.4 **University of Ottawa,** Ottawa, Canada.

Distance education courses provided by the University of Ottawa are delivered as telecourses. They make use of a standard teleconferencing system, using a 60 station bridge, augmented by an electronic blackboard. A small conference room at the University is equipped with an electronic blackboard, Darome speakers and a cordless microphone which is worn by the instructor. A small studio audience may be present as the instructor delivers his or her program.

The electronic blackboard (NEC) enables whatever is drawn on it by the instructor to be transmitted (in black and white only) to all receiving sites, which currently number 17.

The University offers about 25 telecourses each semester to about 700 students enrolled for credit.

It is currently possible to complete two degrees - a Master of Education and a Bachelor of Science (Nursing) - solely by telecourse - and it will soon be possible to complete a Doctorate in Psychology.

The University has also used slow-scan television to augment the electronic blackboard and maintains that "there is practically no limit to the type of course that can be taught successfully over the telephone-

based network. Nor does the network appear to be more suitable for courses from one discipline than from another". However the University considers it essential that on-site visits be made to each centre to explain how the network should be used. Random on-site visits to each centre are also made during the year to see if improvements in the system are required and to discuss the network with students.

Some technologies being looked at for the future are

(i) The Electronic Overhead Projector - enables overhead projector transparencies to be projected on computer screens at remote sites while being controlled by a lecturer at the studio. A computer generated pointer lets the lecturer draw attention to any part of the overhead.

(ii) Digitised Text on an Overhead Projector. This system enables the electronic blackboard and computer messages to be displayed on a large screen at remote sites.

(iii) Compact Disk Read Only Memory. These may eventually be used to replace printed works. Whole libraries of information can be stored on the one disk which can be quickly duplicated and then sent to remote sites or to individual students for playback when required.

(iv) Slow-scan Over the Television Network. In this system the slow-scan picture is transmitted simultaneously with the regular television program and is in full colour. A decoder at the remote site allows students to see the transmitted slow-scan picture rather than the regular program. This system is not, of course, interactive.

(v) VSAT (Very Small Aperture Terminals). This system is already in use in Queensland using QNET and the AUSSAT satellites and has been used in the pilot phase by BCAE staff. TV Ontario is examining the possibility of setting up an interactive VSAT network with schools throughout the province but the experience gained to date in Queensland possibly puts us ahead of Ontario in this regard.

Of special interest was the fact that the University has recently received a grant of about Cd$1.4 million from the International Development Agency to establish a teleconferencing network which would connect universities in Ontario with tertiary institutions in Central America. Currently institutions in Honduras and Costa Rica have been connected and are able to receive both voice and data.

The main aims of this project are to

(a) Establish an educational network designed to improve the qualifications of staff in Central American institutions.

(b) Establish a computer network for research purposes.

(c) Improve university administrative practices.

Other points of note with regard to this system are

1. No special distance education print materials are prepared.

2. No special library services are provided for distance education students who must generally make use of those provided by local community colleges or other local resources.

3. Instructors involved in the presentation of a telecourse receive an additional allowance of Cd$400 for each semester course.

4.5 **University of Waterloo,** Ontario, Canada.

Teaching by correspondence began at the University of Waterloo in 1968 with an initial offering of four Physics courses. The University now offers more than 300 different courses in about 50 different disciplines and three degrees (in Arts, Science and Environmental Studies) can be obtained entirely by distance study. In the early years study materials comprised largely audio tapes of on campus lectures but increasing emphasis is now placed on the provision of a variety of print materials, video cassettes and special kits where necessary.

The University is currently conducting a research project into the use of portable computers in education under a specially funded project called Project ARIES. As part of the project the University is developing networks and software so that students, whether on or off campus, will have access to an extensive range of software and data, high speed printers and centralised file storage.

Off campus students will be provided with the following facilities

(i) an ability to handle a large number of simultaneous calls from remote computers through a public data network,

(ii) a conferencing system,

(iii) an electronic mail system,

(iv) a file transfer system so that students can submit electronic copies of assignments and receive new educational materials.

Various technical problems have yet to be resolved before the system can be regarded as complete but a recently completed trial with 50 students (each equipped with a Toshiba Laptop Portable) enrolled in a 1/2 credit course on microcomputer applications revealed the following:

(a) there is a need for full and clear instruction manuals,

(b) there were early technical problems involved with the use of the built in modems,

(c) assignment acknowledgement and turnaround can be very quick,

(d) the equivalent of one fulltime person was required to manage the system for 50 students (This made it an expensive operation.),

(e) the development of the instructional methodology was very demanding of academic staff time (although this could be expected to diminish with experience).

As pointed out by Black et al. (1988) "It will be interesting to look back at the next ICDE Conference in 1991 to see what impact this trial has had on the practice of distance education at the University of Waterloo." (p.110)

4.6 **Wilfrid Laurier University,** Waterloo, Ontario, Canada.

Distance education courses are offered by television (televideo) and teleconference (teleaudio).

Televideo

Available courses are broadcast over TV ONTARIO or on selected cable systems in the province. Individual video tapes for each course are available on 1/2 VHS format with a fully refundable $45 deposit.

The half-hour or hour-long video portion(s) account for about 1/3 of a course. In addition to the video students gather at a predetermined location twice during the term for a 1-1/2 hour teleconference. A course kit is required for each course which includes text(s), resource binder, study guide and, in some cases, audio cassettes are available as an option.

A general B.A. at a distance is available (except for a couple of courses available on a Letter of Permission) in Sociology and Psychology.

Teleaudio

Audio courses are weekly 2-1/2 hour sessions delivered solely by teleconference. The course is teleconferenced to students gathered together at predetermined locations and the instructor travels to each of these teleconference centres once per term to deliver the course from the centre and meet with students. Course kits, comprised of text(s), resource binder and study guide, are required.

4.7 **Ryerson Polytechnic, Toronto,** Ontario, Canada.

Ryerson Polytechnic in Toronto provides for distant students in three ways

- radio broadcasts supplemented with manuals and study guides
- cassettes - as a spin off from radio broadcasts
- providing face to face classes at remote locations using either resident faculty (part-time) or faculty who travel from Toronto.

All courses are vocationally oriented and only a few certificate programs can be completed in these ways. A few courses are available by correspondence.

The educational service of the radio station is called Open College and its reception is restricted to within a 100 mile radius of Toronto.

4.8 **Other Universities in Ontario,** Canada.

A number of other universities in Ontario offer distance education courses and although I was not able to visit these an idea of the variety of approaches being adopted could be gleaned from various publicity brochures that were available. Here are some examples.

Carleton University.

Degree-credit courses are offered through television (ITV) over the local cable channel 15 and broadcast live from the classroom or studios of Carleton's Instructional Media Services, or pre-recorded. They closely resemble on-campus courses in content and requirements and are drawn from the faculties of arts, social science, science and architecture. Courses are carefully selected to provide a range of disciplines that could be accredited to several certificates and degree programs. However, at present it would be difficult to obtain a degree only through enrolment in ITV courses.

University of Guelph

The distance education program of the University of Guelph comprises 35 degree credit courses, with the objective of expanding to 50 within the next few years. The courses are being developed in areas of speciality within the university such as Family Studies, Public Administration, and Housing.

The courses are primarily print-based, self-contained, and particularly designed for the adult distance learner.

The Ontario Institute for Studies in Education.

This institution is both a graduate school of education (affiliated to the University of Toronto) and a research and field development unit.

Distance mode courses toward an M.Ed. degree use specially designed mixes of learning activities and multi-media resources, integrated with regular class meetings with the instructor. Students are expected to attend at least two face-to-face workshops with their instructor (one at the beginning and one at the end of the course) at a designated site, either in or close to their home area. In between these workshops, students work in local sites and communicate with their instructor in scheduled telephone-based classes, or in asynchronous computer-based seminars. OISE supplies expertise and audio equipment, but with classes needing computers students must supply their own computers or have regular access to one. Where appropriate, students in different

geographic areas may be linked via an audio-conference bridge to enhance class interactions.

4.9 **University of Calgary,** Calgary, Alberta, Canada.

The University of Calgary has a small, but growing distance education program with enrolments of about 1 200 students each year. Only one full course (Diploma in Curriculum and Instruction) can be completed totally at a distance but a masters degree in Adult and Community Education is available at a distance combined with a one month on campus program. A major goal over the next few years is to provide opportunities for nurses to upgrade their qualifications to degree level and such courses must be available at a distance.

The main technique used for delivery is **teleconferencing** which makes use of the network of more than 45 centres in the province equipped with teleconferencing equipment and toll free telephone lines. Each subject offered comprises approximately one two-hour teleconference each week for 13 weeks, and some study materials support is provided. This approach is said to be equivalent to the 39 hours of face to face interaction that would normally take place in the on campus environment. Minimum enrolments of about 10 usually apply and maximum enrolments are normally no more than 30 for undergraduate subjects and 20 for those at the postgraduate level.

The University is currently looking at possible uses of the OPTEL system (available in some 20 centres) and at video networks.

As with many other institutions in Canada offering subjects/programs at a distance, staff are paid on an overload basis from funds available to the Faculty of Continuing Education.

4.10 **Simon Fraser University, Vancouver,** British Columbia, Canada.

Although not a specific use of communications technology in the delivery of higher education at a distance a very interesting use of the technology is in operation at Simon Fraser University and is worth reporting here.

X Change is an education network featuring electronic mail, conferences and data-bases. It has been set up by the Faculty of Education at Simon Fraser University (SFU) in British Columbia and uses the SFU MTS (Michigan Terminal System) computer system. Almost 3 000 teachers, administrators and other users have now been provided with free access to the system which enables members to

(i) communicate with other members of the X Change network using an electronic message system,

(ii) participate electronically in conferences on a variety of curriculum topics,

(iii) browse through The Groliers Electronic Encyclopedia or conduct searches on ERIC (Educational Resources Information Centre).

One of the main aims of X Change is to serve the professional development needs of teachers. This is partly accomplished through the establishment of electronic conferences on topics of specific interest. Anyone may start a conference but those currently in operation deal with such topics as curriculum issues in maths, science and language arts. There are also conferences serving specific educational groups and have such names as Music-Net, Teletalk, Logo, Ask-an-Expert and Gifted-Net. Other conferences such as Rendez-Vous set out to explore the potential of electronic cultural and linguistic exchanges for teachers and students. A conference called Close-Encounters recently brought contact between students in Canada, Japan and USSR. X Change also delivers inservice workshops on request to school districts and other groups.

An important feature of this system is that it is essentially free for most users except for the cost of a very comprehensive resource guide (with regular updates) which is Cd$25.

Those from smaller communities without a Datapac port would also have to pay the STD charges to the nearest port. (Datapac is the computer communications network which serves most of Canada and is available in most cities and towns in British Columbia. Its closest equivalent in Australia is AUSTPAC which has the distinct advantage of being accessible from anywhere in Australia for the price of a local call.)

All costs, including the not inconsiderable administrative ones, are born by the SFU Education Faculty.

4.11 University of British Columbia - UBC Access

Distance education at the University of British Columbia is offered under the umbrella term UBC Access. It is a partnership between faculties and departments responsible for academic programs and course content in consultation with the Guided Independent Study Unit and other service departments. Activities are coordinated, planned and budgeted through monthly meetings of the Coordinating Committee for Distance Education which reports to the Associate Vice-President, Academic.

Guided Independent Study is the central service department responsible for the design, production and delivery of credit courses off campus although the Distance Education Office in the Faculty of Education handles the delivery of most Education courses. In 1987/88, 72 courses were offered with a registration of 1667 students.

Of special interest to me was the work of the Faculty of Education, Distance Education Office (DEO) because of its work in the field of inservice education for teachers. In fact I learnt that the DEO was established in 1975 to carry out virtually the same tasks set for BCAE (then Kelvin Grove and Mt Gravatt in 1974 and 1975 respectively) viz. to provide inservice courses to enable practising teachers to upgrade their qualifications.

The DEO now offers a wide variety (currently 32) of diploma programs, roughly equivalent to graduate diploma programs in Australia, which may be completed via spring or summer sessions, by correspondence, via appropriate credit courses available on the Knowledge Network or by a combination of all three methods. (Not all subjects are necessarily available by all methods.)

All courses, under the general title of Diploma in Education, comprise a fixed core or specialisation component together with electives and would seem to provide a great degree of flexibility for students as well as a rational use of resources. Subjects in these programs may also be used by teachers to complete their degrees.

The DEO regularly carries out needs assessments with the cooperation of school districts and this enables it to ensure that appropriate courses are developed. It was interesting to note that, for the next three years, priority areas will be:

Special Education
Curriculum and Instruction
Counselling and Guidance
Early Childhood Education
Educational Psychology
Reading

and core programs in these areas are now being prepared.

It was also interesting to learn that most distance education course preparation work is done by academic staff on an overload basis but under contract to the DEO and I received some very useful information relating to course development guidelines and costings.

A recent approach has been to develop combined video/print packages for core units. Each course comprises approximately 10 x 30 minute programs produced in a studio (illustrated studio presentation) supported by study guides and other print material. The videos may be shown on Knowledge Network and/or sent out to study groups and, occasionally, individuals. Tutor support is available at fixed times on a toll free telephone number, by teleconferences and, in some cases, by on-site visits.

It would seem that the Faculty of Education at UBC and the three Schools of Teacher Education at BCAE have much in common not only with respect to the kinds of inservice programs they are providing for practising teachers but also with respect to their desire to deliver such programs to geographically isolated areas. Closer links between the two institutions could be of mutual advantage, particularly in such matters as materials preparation for external delivery and in research into the use of various technologies.

A copy of a leaflet on UBC Access appears as Appendix C.

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5. Cooperative Ventures

5.1 Introduction

In a very real sense, any institution that decides it would like to use telecommunications in its delivery of distance education programs must become involved in co-operation with others. Installation of equipment such as loudspeaking telephones, telewriters, and satellite dishes requires the use of facilities usually owned by others. The distribution of radio or television programs will require scheduling and, very often, the use of equipment owned by other organisations. Cooperation and coordination are required. Hence the institutions referred to above clearly find it necessary to cooperate (or at the very least negotiate) with others. However the extent of the cooperation required may be quite small and the extent of collaboration between institutions almost non existent.

Partly in recognition of this fact, governments in some places have seen fit to establish structures designed to foster cooperation and/or accept responsibility for functions that individual institutions have been reluctant or unable to accept.

This matter of institutional cooperation, with its (often vague and unsubstantiated) implications for "rationalisation" and "economic use of scarce resources" is of particular relevance in Australia at the present time. Hence it is useful to examine a number of specific examples from elsewhere. Those on which I will make comment are:

1. The Open Learning Agency (OLA) of British Columbia.
2. Knowledge Network (KN). (Although strictly a branch of the OLA it warrants a separate section in the context of this report.)
3. Access Network of Alberta.
4. Contact North/Contact Nord of Ontario.
5. Scottish Council for Educational Technology (SCET).
6. Central Institute for Distance Study (ZIFF - West Germany).
7. German Institute for Distance Education (DIFF - West Germany).

5.2 Open Learning Agency

The Open Learning Agency (OLA) was established by an Act of the British Columbia Parliament in December 1987. The OLA absorbs, but extends, the work of two previous organisations - the Open Learning Institute (OLI) and the Knowledge Network of the West (KNOW) - and reports to the Minister of Advanced Education and Job Training.

The purposes of the agency as defined in the Act are, in collaboration with universities, institutions, boards of school trustees and other agencies concerned with education, to

(a) provide an educational credit bank for students,
(b) coordinate the development of open learning education,
(c) use open learning methods to provide educational programs and services,
(d) carry out research related to open learning education, and
(e) operate one or more broadcasting undertakings devoted primarily to the field of educational broadcasting.

The Agency currently has 3 major components:

(i) the Open University
(ii) the Open College
(iii) the Knowledge Network

although it has powers to establish other components if thought necessary. The Agency also has powers to establish educational objectives and guidelines for any component.

Of special interest is the fact that the Open University established under the OLA Act may grant degrees in its own name.

In a report such as this it is not possible to provide a complete analysis of the work of the OLA but some idea of its scope may be ascertained from its advertising leaflet, of which an extract appears as Appendix D.

An outline of the operations of the Open University component appears in Appendix E. It has been taken from the Open University Calendar 1988-1989.

Because of its particular relevance to my objectives some further details concerning the operation of the Knowledge Network are given below.

The Discovery Training Network, which provides computer access to more than 175,000 courses, seminars and workshops also operates under the auspices of the OLA. Information about its operations is given in Appendix F.

5.3 Knowledge Network

The Knowledge Network, based in Vancouver, Canada is British Columbia's Educational Telecommunications authority and provides an excellent example of cooperation in distance education. Some features of the Knowledge Network's activities have been described in a recent paper by Mitchell and Harrington (1988) titled *The Knowledge Network - A cooperative distance education model using telecommunications technology.*

Here are some extracts.

> *...As the provider of the telecommunications system, the Knowledge Network is at the hub of electronic distance education activities in the province. Working in cooperation with twenty post secondary institutions, communication organizations, government ministries, and with business and industry, the Knowledge Network has developed telecommunication systems in response to a wide range of*

programs, learner groups and education providers. These systems include satellite to cable television, radio (pilot), closed-circuit video teleconferencing, and telephone based audio teleconferencing, telewriting and computer conferencing....

...Video teleconferencing in British Columbia has developed for continuing professional development education. A closed-circuit dual 450 Mhz cable system links twenty sites in the Greater Vancouver area. This cable system allows the Knowledge Network to receive and redistribute video teleconferences available from outside the province and provides those in the health care community with professional development sessions which can be made available via the closed-circuit system and satellite to groups meeting at sites throughout the province or beyond. Video teleconferencing for professional development is a growing area in British Columbia.

The Knowledge Network is also developing a telephone-based telecommunications network. Audio teleconferencing, using the Network's twenty port teleconferencing bridge, allows users to conduce seminars, tutorials, or instructional sessions in conjunction with, or separate from programs offered by television and print. By "piggybacking" on the provincial government toll-free telephone lines, users of teleconferencing can reach 90% of the province without incurring long distance charges. Projects are also underway to expand the use of this cost-effective system by exploring telewriting and computer conferencing technologies which will allow instructors and students to interact via a teleconferencing bridge with simultaneous visuals, data, and voice....

...Educators throughout the province look to the Knowledge Network for a variety of telecommunications media depending on the learning program. These media include: satellite to cable distribution of television, radio, sloscan, and data; closed-circuit distribution of video teleconferencing; telephone distribution of audio teleconferencing, telewriting, and computer conferencing. Non-telecommunications media include audio cassette, audiographic, video cassette, and (under consideration) video disc....

...The content and design of programs are controlled by each distance education provider but the Knowledge Network helps them understand how audience and content determine the selection and combination of media. For example, if the design of the program calls for full motion video for a demonstration sequence the Knowledge Network will assist the programmer in choosing between broadcast television, video cassette and video teleconferencing. If the interacitvity is an important part of the program, the program designer can choose live television with phone-in, conferencing (computer, audio, or enhanced audio), or a phone call to a tutor...

...The Knowledge Network is a telecommunications network but it is also a resource and support network for all educational institutions and organizations who use distance education. British Columbia is not a centralized or decentralized distance education model but a cooperative model. Each distance

> *education provider is able to develop programs which meet the needs of their constituency yet each looks to the Knowledge Network as an information as well as communications hub. This hub position enable the Network to identify gaps in province-wide distance education programming, pinpoint duplication of effort, encourage cooperative development, reduce system-wide costs, facilitate effective media selection, and develop communication systems in response to needs....*

As Roy Lundin (1988) has recalled in his report it is estimated that more than 400 000 people watched Knowledge Network programs at least once a week - in a province of approximately 2.9 million people.

Appendices G and H give further details of Knowledge Network's use of telephone related technologies.

5.4 **Access Network,** Alberta, Canada.

Access Network provides an educational broadcasting service for all of Alberta. It delivers formal, non formal and cultural television programs, including those suitable for primary and secondary schools, 15 hours per day, 7 days per week. It also delivers both AM and FM radio programs for about 17 hours each day. It produces its own courses, and works closely with individual institutions seeking to use the services provided by the network. Access receives its funding from federal and provincial governments as well as from private sources. Considerable funds come from special project grants made available by a variety of sources. For example, it is currently working closely with the Alberta Correspondence School to improve services to small rural schools. Considerable funds are also being spent on the updating of programs to provide for a wider combination of media and support services.

Access leases a full transponder for the distribution via satellite of its TV and audio signals and this costs about $1 million per year. In addition all cable services in Alberta carry Access programs.

It is not yet possible to complete any full credit course via the Access Network and any programs offered by institutions comprise either supplementary material to credit programs or are non credit, adult education type programs.

It was interesting to learn that, despite the extensive hours of transmission only about 15% of transmitted material is actually produced by Access. The remainder is acquired from other sources.

The role of Access is largely a reactive one as it does not experiment with or test new technologies but rather waits until they have been used and evaluated elsewhere.

The success of the Access model would seem to depend largely on the emphasis society and governments place on educational broadcasting. This in turn will determine the level of funding that can be sustained and the number and quality of programs that can be provided.

Additional information relating to Access can be found in Lundin, R (1988) p.20.

5.5 Contact North

Contact North is an initiative of the Ontario Government designed to increase educational opportunities for residents of Northern Ontario. It was established in October 1986 as a four-year distance education pilot program with an initial budget of 20 million dollars (Canadian).

The government's objectives were as follows:

1. to improve access to formal educational opportunities at the secondary and post secondary levels for residents of Northern Ontario

2. to establish a long-term capacity to improve access to other training and informal educational opportunities

3. to meet the ongoing and emerging educational needs of residents in communities remote from conventional delivery technologies

4. to meet the special needs of francophone and native peoples in Northern Ontario

5. to create new and expand existing expertise in the design and operation of technologically enhanced distance education programs in Northern Ontario

6. to create models for the alternative delivery of educational services capable of:
   a) application more broadly through Ontario
   b) application to the needs of other jurisdictions, including developing countries

7. to create a "test-bed" to evaluate the effectiveness of various technologies in delivering distance education.

The region covered by the project is an area of 313 000 square miles and has a population of about 800 000. It includes 2 universities, 5 community colleges and more than 30 school boards.

The concept of one network to serve several levels of the formal education system posed interesting organisational challenges which led to a fairly complex structure being adopted.

Croft et al (1988) provide details on the structure and the market of Contact North:

The Organisation
To implement the project, the North was divided into two regions, northeast and northwest. Regional coordinating centres were established in Thunder Bay and Sudbury, to administer a network of remote access sites located in communities chosen by the Ministry of Northern Development. The network portion of the project was named Contact North/Contact Nord.

To ensure that the project was indeed northern in its administration and that it was adequately supported, the government contracted jointly with

Lakehead University and Confederation College in Thunder Bay and Cambrian College and Laurentian University in Sudbury to set up the coordinating centres and oversee them. Such close collaboration on a major project was unusual. To advise the contractors, two regional advisory boards were announced by the Ministry of Northern Development, each composed of representatives from the university, college and secondary systems, as well as a matching number of people from the communities at large.

Staff were hired in each regional centre to provide assistance in areas of instructional design, liaison to the secondary, native and francophone communities as well as technical administrative support. Monies were also provided to each centre to contract out research projects related to distance education and a major evaluation of the project is being funded by the government.

During the planning process, several government departments became involved, with the lead gradually being taken by the Ministry of Colleges and Universities, and Education and Northern Development also being heavily involved. Two committees were eventually struck: the Provincial Management Group, consisting of five senior civil servants; and the Project Management Committee, consisting of representatives from seven ministries and the Ontario Educational Communications Authority, personnel from the four northern contractors and the two regional coordinating centres.

The Ministry of Colleges and Universities chairs both committees.

The Market

Contact North/Contact Nord exists to serve two different constituencies; institutions offering courses and the general public wanting to take those courses. However, this double mandate has created challenges in personnel and resource allocation.

Twenty-seven communities were selected by the government in May, 1987 as the initial network, with part-time coordinators hired and trained in each community. Office and classroom space was donated in each community by the college and secondary school systems. Equipment installed included audio-teleconferencing bridges in Sudbury and Thunder Bay and audioconferencing terminals, IBM computers and printers, VHS playback units and monitors and facsimile machines at the access sites. Over 40 courses at all three levels launched the network in September. Contact North/Contact Nord was established as a distribution network for courses and information. It does not plan or develop courses, nor are the site coordinators community development officers, although these have both been areas of contention.

Funds are available for the development and production of new courses but a requirement for access to those funds is that proposals must be joint ones from at least two different institutions.

Some of the issues that have become apparent to date and which will receive attention during the evaluation phase now taking place are

(a) Close collaboration makes sense but requires extra financial resources, personal commitments and considerable institutional support. Are these justified?

(b) The resistance of academic staff to changes and the introduction of new technologies cannot be easily or quickly overcome.

The preparation of courses to be delivered by telecommunications is very time consuming and can be quite threatening. In fact one could suggest that the more technology that is available the more preparation and planning is required if it is to be used effectively. Certainly academic staff training needs to be built into any plan requiring the use of new technology and staff need to be given appropriate credit or incentive for developing programs requiring its use. At present audio teleconferencing seems to be the most common form of delivery used, probably because it is the easiest and least time consuming technique to master.

(c) The extensive lead time needed to produce quality courses involving cooperation between two or more institutions. This implies that, even when there is a willingness to use new technologies, equipment can remain under utilised because it is not possible to produce many programs quickly. Is a four year pilot program sufficently long to enable to full potential of a system to be achieved or assessed?

Additional information on Contact North can be found in Lundin, R (1988) p.6.

5.6 Scottish Council for Educational Technology (SCET), Glasgow, Scotland.

SCET was originally established in 1975 and now comprises six integrated units.

SCET is a research and development agency, largely funded by the Scottish Education Department, focusing on education and training in Scotland with:

- Promotion of effective learning and teaching
- Communication of good practices
- Staff development in education, industry and community services
- Evaluation of present and future activities in educational technology.

The six units comprising SCET are:

- Learning Systems
- Research and Development
- Microelectronics Software Development
- Computer Administration Systems
- Media Resources
- Information Publications and Communications

Their activities are outlined below:

Learning Systems

Open Learning

- promotes innovative learning systems, including open learning throughout the school, post-school and industrial training sectors;
- gives information, advice, consultancy and staff development on all aspects of open learning and other innovative learning systems;
- services SCOL (Scottish Committee on Open Learning) the national forum for advice and information on open learning;
- currently runs a major SED research project looking at development of open learning packages from National Certificate Module Descriptors.

Resources

- houses the open learning resource library with over 2 000 samples of open learning materials;
- publishes a range of case studies and other books on open learning. Edits and produces the Open Learning Directory; the 1987 version contains over 600 course details. Recent publications include:
  - Schools Guide to Open Learning (jointly with NEC)
  - Flexibilities - an innovative simulation looking at the resource implications of open learning developments.

SCET's focus on

- provides the focus for SCET's work in industrial training and SCET's work concerned with the National Certificate;
- is the focus for SCET's work in TVEI (Technical Vocation Education Initative); TRIST (TVEI Related In-Service Training); the Open College; and resource based learning in schools.

On-line Information

- incorporates MARIS-NET, an on-line information service for education and training. Services include provision of information about open learning packages and supervisory, technical and management areas, information about training services and suppliers, an open learning bibliography and an electronic mail service.

Research and Development

Research Projects

- administers funding of research projects for the Microelectronics in Education Committee (MEC). £80 000 is allocated each year to about 12 projects, carrying out "action research", which is designed to be immediately useful to teachers. The priorities for determining which proposals will receive a grant are given below.
- Institutionalising Micros

  projects which focus on investigations into the institutionalising of microcomputers and microelectronics devices in schools receive a high priority.
- Good Practice

  MEC favours projects which stimulate and support the development of microelectronics in its broadest sense and particularly which identify the factors which are consistently associated with good practice.
- National Plan

  External projects developing work connected with the National Plan also receive a high priority.

- The Unit also has an important role to play in establishing and managing research and development projects within SCET.

National Plan

- the Unit is at the forefront of National Plan developments, including:
- software development environment;
- common operating system;
- demonstration software;
- in-service training.

Microelectronics Software Development

Computer Software

- creates educational materials including computer software, audio video, and text-based materials, in repsonse to specifications from expert groups of educationalists;
- works to nationally agreed 2-year rolling program with new materials produced every 6 months and distributed to all Scottish Local Authorities;
- the materials are marketed outside Scotland by Scetlander Ltd.

Projects

- Standard Grade Computing
  producing packages to support the Standard Grade examination in Computing with educational versions of standard business and commercial applications packages - eg word processors, hotel registration etc.
- Standard Grade English
  producing software to encourage project-based methods in English.
- Modern Languages
  development activities are taking place on a number of language projects throughout Scotland.
- R&D Support
  support for the work of the R&D Unit of SCET covers Primary Environmental Studies; National Plan Development; Computer Assisted Topics; and 10-14 ages development work.
- Basic Nurse Education in association with the National Board for Nursing in Scotland.

Other Work

- Community Education
  At the end of the SCAMP Project, support is continued through the Scottish Community Education Council.
- Flexitec
  A practical training facility for small business and community training in the use of computers in a business environment.

Computer Administration Systems

Scamp

- has developed the Schools Computer Administration and Management Programme (SCAMP). It is a massive fully-integrated, computerised schools administration system, which is considered to be the most advanced project of its kind in Europe;
- SCAMP is currently available on 12 different microcomputer systems and operates in single-user or multi-user mode, depending on the equipment and operating system selected. It is continually upgraded and enhanced.
- SCAMP's characteristic feature is its integrated approach, on a 'single-entry, multiple-use' concept. This allows the mass of discrete items of data necessary to the running of a school, having been entered once only, to be stored systematically without duplication and processed as and when required to provide all reports, assessments.
- SCAMP has developed in response to the needs of users.

Aspects of SCAMP include;

- Menu; Backup and Recovery; Admissions; Class/Course Allocation; Registration; Assessment-Profiling; Assessment-Norm References; Exam Board Entry/Returns; Communications; Staff Records; Timetabling Aids; Statistics; Finance; Inventory; and Library Systems.

Further Education

- SCAMP is widely in use in schools throughout the UK and is being extended to SCAMP for Further Education Colleges.

Support

- the SCAMP team provides training, advice, consultancy and day-to-day support.

Media Resources

Media Related Technologies

- identifies the educational potential of cable, satellite and other broadcasting technologies.

Media Resources

- provides resources through the Scottish Central Film and Video Library (SFVL), which holds over 3 000 films and 1 000 videos for education and training.

Media Services and Facilities

- provides a range of technical services including equipment hire, preview and cinema facilites, and sound and video production facilities.

Materials Production

- produces audio-visual and print materials to support the work of SCET and Scottish educational initiatives.

Training

- provides advice, consultancy, training courses and materials to promote and encourage:
  skills associated with the organisation, selection and effective educational use of new and established media and resources;
  choice of appropriate teaching and learning strategies that encourage effective integration of media and resources;
  skills associated with the design and projection of audio-visual resources.

Competitions

- runs Scottish Young People's Video and Slide/tape competitions.

Information Publications and Communications

Publications

- produces and markets all of SCET's printed publications;
- edits and distributes SCET NEWS Education and SCET NEWS Training;
- publishes the periodical "Micros in Scottish Education".

Computer Software

- distributes packages in SCET's supported software library;
- provides an information service on educational software available in the UK;
- negotiates national purchase of software licences.

Electronic Information Systems

- provides information on NERIS (National Educational Resources Information Service), PRESTEL, SCET's private viewdata system and TTNS (the Times Network Systems);
- maintains SEND (Special Educational Needs Database);
  provides advice, consultancy and services to education, industry and commerce.

Promotion and Publicity

- provides information in response to enquirers;
- organises displays at exhibitions;
- arranges press coverage.

Library

- collects monographs and periodicals for consultation by SCET staff and others;

- gives access to on-line database and electronic mail facilites.

Some information on the operation of MARIS NET appears in Appendix J.

Although the work of SCET is directed more to the secondary and vocational education areas than to higher education it provides a very useful model of an organisation desiring to integrate all aspects of the teaching learning process and, in particular, to assess the role technology might play in this process.

5.7 Central Institute for Distance Study, West Germany.

ZIFF (Zentrales Institut fur Furnstudienforschung).

ZIFF is the research arm of the Fernuniversitat. This University was established in 1974 and is the only institution in West Germany offering distance education programs at university level. My main purpose in visiting this institution was to discover what levels of co-operation had been achieved with other institutions and what plans there were to use various technologies now available.

The University itself is a very traditional and conservative one in which emphasis is placed on the production of print materials. Relatively little use is made of other media or new technologies and the University has found it extremely difficult, if not impossible, to cooperate with other higher institutions other than those in its state (Lander) of origin viz. North Rhine-Westphalia. Although the University does accept students from other states and, indeed, from overseas it receives virtually no support from them. Thus, for example, the federal nature of the country and state rivalries and legal provisions mitigate against the establishment of study centres and even prevent any extensive use of radio and television.

Furthermore even where study centres have been established (there are now about 30 of these, mostly in North Rhine-Westphalia) I was advised that they are rarely used by students. Other student support services such as counselling, teleconferencing or the provision of library services are virtually non existent and I found no evidence of any use of, or significant experimental work with, newer technologies.

Not only does cooperation seem to be impeded by the fact that the Fernuniversitat is perceived to be a **state** institution but other factors are also at work. These include:

(a) that distance education is not yet accepted by the traditional universities and their staff (and perhaps even politicians) as a legitimate form of higher education

(b) the lack of awareness by many academic staff of the potential of new media (This also applies in many other countries.)

(c) the costs involved in using, or even experimenting with, communications technologies in Germany.

Although the emphasis is on printed course materials the University has established a centre - called the Distance Education Development Centre (ZFE) - whose main task has been to produce audio and video cassettes relevant to written courses. Videofilms are broadcast regularly on local television but neither viewing of the TV transmissions nor the borrowing of videotapes is compulsory for external students. Video/TV productions are regarded as supplementary material only.

The University will be participating in the Olympus European Educational TV Channel in order to extend its TV reception area but not necessarily to increase the number of students who will have access to its programs. (The Olympus satellite of the European Space Agency is due for launching in 1989 and will have at least one educational TV channel available. A great deal of debate was occurring as to how this channel would best be used!)

5.8 The German Institute for Distance Education. (DIFF)

DIFF, which is affiliated to the University of Tubingen in Tubingen, Federal Republic of Germany, has a remit *to pursue research into, evaluation of and development of teaching-learning models. Its main field of work is in higher-level further education, particularly the professionalization of teachers.* Emphasis is on research which exploits the possibilities of distance study methods and *in this context it develops and produces study materials after prior investigation of addressees needs and with special attention to the inclusion of new media in the teaching packages.* The Institute is, legally, a private foundation which is funded by the Federal government and the eleven States. It *co-operates with higher education institutions and with other educational establishments at the tertiary and adult education levels, particularly in the initiation, evaluation and implementation of higher level further education using guided self-study materials.* The DIFF employs approximately 100 permanent members of staff and is supported by about 400-500 academic experts working on a contract basis. The heart of the Institute's work relates to the provision of inservice course materials for teachers and to this extent it complements the work of the existing institutions of teacher education. It is in fact concerned with helping to integrate its prepared materials into the curricula of teacher education institutions.

Major areas covered at present are:

Mathematics/Computer Science
Natural Sciences
Social Sciences/History/Economics
Education Science/Adult Education
Further Education Using Telecommunications
Research into Learning
Media Research

The fact that DIFF has been in existence since February 1967 would seem to attest to the success of this model for the production of self-study materials.

5.9 The Open University, United Kingdom

My main purpose in visiting this well known and much publicised institution was to look at the operations of its study centres and the problems, if any, associated with the need for cooperation with other institutions. O.U. Study centres are used primarily to provide a setting for face to face contact between students and their tutors. Most study centres (there are more than 250 in the United Kingdom) are, in fact, rooms in universities, polytechnics or other institutions. These rooms are hired by the O.U. which also hires local tutors to mark assignments and present tutorials. At one time study centres were well equipped with a range of equipment such as video and audio cassette recorders, but these are being phased out because of lack of use. Most students do not use study centres except to attend tutorials. All foundation courses have provision for tutorials (about 40 per year) but the more advanced courses (with fewer enrolments) may have no tutorials, or only a few in some centres. Attendance at tutorials is not compulsory and in fact many of the more isolated students have not got ready access to a study centre and hence are unable to attend anyway. Even the attendance at tutorials by students who live reasonably close to a study centre may not be very high and their only contact with tutors may be via their written assignment. (Tutor marked assignments comprise about 50% of the assessment for most O.U. courses.)

The O.U. also uses laboratory facilities at other universities for the purpose of conducting compulsory residential schools that are an integral part of some of its courses.

While there have been some minor problems involved in using the facilities of the institutions (e.g. rooms being locked during vacation periods) the system generally seems to work very well and host institutions welcome the presence of O.U. students and their staff. Payment for the use of facilities is worked out using a complex formula but seems to satisfy all those involved.

It is important to note that the day to day administration and coordination of O.U. regional activities, including the appointment and supervision of tutors, is carried out at regional offices by full-time O.U. administration staff and staff tutors. In turn, the work of the regional offices is coordinated by a small central unit at Milton Keynes, the home of the O.U.'s operations.

While referring to the O.U. it is of interest to note that over recent years it has placed increasing emphasis on the production and provision of **study packs** for continuing personal and professional education and on generally opening up of existing courses to non-credit students. Enrolments are accepted, under what the O.U. calls its associate student program, into one or more of three different kinds of offerings;

- Courses and packs to help further a career.
- Courses and packs to develop personal interests.
- Family and community packs.

Courses are of variable duration and level and an important feature is that satisfactory completion of many of them enables them to be counted towards a B.A. degree after completion of a foundation course even

though enrolment for credit may not have been the original intention. Enrolment fees for associate students vary from £8 to more than £300.

It would seem to be appropriate for Brisbane CAE to consider the feasibility of making its external studies materials available to a wider audience than just those enrolled in credit programs. Some modifications to existing materials would be necessary in many cases and consideration would have to be given to the production of high quality "packs" designed for largely unsupported self-study. However this would seem to be a most appropriate way of making the college's expertise available to a wider audience than can be reached by current continuing education activities.

...

6. Other Matters

6.1 Commonwealth of Learning

I was fortunate to be in Canada at the time of the inauguration of the Commonwealth of Learning and the announcement that the first President would be Dr. James Maraj, a former vice chancellor of the University of the South Pacific and Fiji's High Commissioner to Australia.

A press release of 14 November 1988 includes the following statement about the work of this new organisation:

> *The Commonwealth of Learning has been created to widen access to opportunities for learning throughout the Commonwealth in order to advance human resource development, thereby promoting economic and social progress. It will do so by making use of the potential offered by distance education and by the application of communication technologies. In co-operation with colleges, universities and other educational institutions throughout the Commonwealth's 48 member countries, it will stimulate the exchange of teaching materials, support the training of staff and provide a new mechanism for educational co-operation. It will start its programme of work early in the new year.*

The Commonwealth of Learning will have its headquarters in Vancouver, British Columbia, and will be funded by contributions from Member Countries. Canada will be providing up to $12 million over the next 5 years and I understand Australia's contribution will be about $3 million.

I was able to visit the offices of the Secretariat in Vancouver and also obtained a copy of the report of the working group established to develop the financial and organisational framework for this new institution and to establish appropriate guidelines and principles for its operation. The executive summary of this report provides further insight into what the institution aims to achieve:

> EXECUTIVE SUMMARY
>
> This report sets out plans for a Commonwealth institution to promote co-operation in distance education to be called the **Commonwealth of Learning**. Its purpose is to respond to the needs of human resource development through co-operative activity which will widen access to educational opportunity for students, will extend the range of programmes available to those who need them, will improve quality through the sharing of resources, will seek cost-effective solutions to large-scale educational needs and will focus on governmental and individual needs of high priority. This will be achieved by means of co-operative activities in distance education. The priority activities will include:
>
> > strengthening national capacity in distance education through staff training, improved communications, a better awareness

of existing distance-education programmes, and collaboration in evaluation and research;

sharing of existing distance-education materials and developing new ones, possibly for use in several countries;

helping distance-teaching institutions to provide better services to students by facilitating the transfer of credit and improving study-support systems.

It will operate through a co-operative network of colleges, universities and other institutions and will use the most appropriate communication technologies to promote direct exchanges between them.

The **Commonwealth of Learning** will have its Agency headquarters in Vancouver and an information service based at the Open University in Britain. Regional activities will be promoted through a variety of structures. It is proposed to take advantage of the existence of the regional universities of the South Pacific and the West Indies and of the offer by the governments of India and Nigeria to host regional units. A unit in Malta concerned with the particular educational needs of small states is proposed.

The resources available for the first quinquennium already total £9.5m in convertible currency, and at least £5m in earmarked or in-kind contributions. Further contributions from member countries are expected and other funding will be sought on a project basis.

The Commonwealth of Learning will have a Governing Board comprising nine government appointees of whom five will represent the largest donor governments, three members appointed by the Board, two members appointed by the Commonwealth Secretary-General, together with a Chairman, the Secretary-General, together with a Chairman, the Secretary-General or representative and the president of the Agency. The Board will work under the authority of a Memorandum of Understanding between Commonwealth governments.

I would hope that Brisbane CAE will be able to contribute to the work of the Commonwealth of Learning and participate in its activities. Professor Malcolm Skilbeck, Vice Chancellor of Deakin University is Australia's representative on the Board of Governors.

• • •

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Appendix A

Places and Contacts ((In chronological order)

10-16 August	International Council for Distance Education Conference in Oslo, Norway.
25 August	Professor Dr Borje Holmberg, Director, Zentrales Institut fur Fernstudienforschung (ZIFF), Hagen, Germany.
	Andreas Kunze, Director, Media Centre, FernUniversitat, Hagen, Germany.
29 August	Professor Dr Karlheinz Rebel, Director, Deutsches Institut fur Fernstudien, (DIFF), Tubingen, Germany.
7 September	David Sewart, Head, Regional Academic Services, Open University, Milton Keynes, England.
	Keith Harry, Documentation Officer, International Centre for Distance Learning, Open University, Milton Keynes, England.
9 September	Derek Spruce, Deputy Regional Director, OU South Regional Office, Oxford, England.
12 September	Colin Lockhurst, Senior Counsellor, OU South West Regional Centre, Bristol, England.
	Lans Aleeson, Staff Tutor (Mathematics), OU South West Regional Centre, Bristol, England.
15 September	Roger Beck, Staff Tutor (Science), OU Plymouth Sub Office, Plymouth, England.
27 September	Dr Henry Ellington, Robert Gordon's Institute, Aberdeen, Scotland.
29 September	Dr Judith George, Deputy Director, Open University in Scotland, Edinburgh, Scotland.
30 September	Nigel Paine, Assistant Director, The Scottish Council for Educational Technology, Glasgow, Scotland.
	Philip McAra, Computer Systems Manager, MARIS-Net, Glasgow, Scotland.
	Carl Togneri, Adviser in Educational Technology, The Scottish Council for Educational Technology, Glasgow, Scotland.
3 October	As for 7 September (Further meetings at Open University)

11 October	Memorial University of Newfoundland, St. Johns', Newfoundland, Canada.

- David Curran, A/Director, School of Continuing Studies in Education, Division of Extension Services
- Ern Cole, Assistant Director, Division of Continuing Studies
- Craig McNamara, Director, Division of Educational Technology
- Bob Hyde, Assistant Director, Division of Educational Technology
- Erin Keough, Director, Telemedicine Centre
- Graham Skanes, Dean, School of General and Continuing Studies in Education.

12, 13 October	Mount Saint Vincent University, Halifax, Nova Scotia, Canada.

- Chris Beckett, Co-ordinator, Department of Distance University Education via Television (DUET)
- Jean Hartley, Acting Director, Centre for Continuing Education

17 October	Concordia University, Montreal, Ontario, Canada.

- Jocelyn Picot, President, Canadian Communications Group
- Gary Boyd, Professor of Education (Educational Technology)

19, 20 October	University of Ottawa, Ottawa, Ontario, Canada.

- Don McDonell, Co-ordinator for Distance Education

21 October	Ryerson Polytechnical Institute, Toronto, Ontario, Canada.

- Milton Orris, Dean, Continuing Education Division
- Lorraine Wilson, Program Director, Continuing Education Division

24 - 26 October	University of Waterloo, Waterloo, Ontario, Canada.

- Bruce Lumsden, Associate Director for Distance Education
- Jennifer O'Rourke
- Gordon Ambrose, Manager, Corrspondence Student Services
- Don Kasta, Continuing Education Liaison Officer
- Sally Haag, Professor, Faculty of Arts

26 October — Wilfrid Laurier University, Waterloo, Ontario, Canada.

- Cliff Bilyea, Director, Part-time Studies and Continuing Education
- Werner Lindschinger, Director, Technical Producer
- Linda Kraema, Distance Education Administration

28 October — Laurentian University, Sudbury, Ontario, Canada.

- John Daniel, President, Laurentian University
- Denis Mayer, Associate Director, Centre for Continuing Education

Contact North.

- Judy Roberts, Director, NE Regional Co-ordinating Centre
- Bruce White, Program Adviser, NE Regional Co-ordinating Centre

1 November — Lakehead University, Thunder Bay, Ontario, Canada.

- Susan Cole, Head Distance Education
- Robert Sweet, Professor, Faculty of Education

Contact North.

- Bernie Simand, Secondary School Liaison Officer, NW Regional Co-ordinating Centre

4-8 November — University of Calgary, Calgary, Alberta, Canada.

- Erv Shieman, Dept of Curriculum and Instruction
- Randy Garrison, Head, Distance Education
- Doug Shale, Academic Analyst, Office of Institutional Analysis
- Shepard Braun, Director, Office of Institutional Analysis

9 November — Mount Royal College, Calgary, Alberta, Canada.

- Rose Marie McLean, Instructional Design Consultant
- Marg Osborne, Post-basic Mental Health, Nursing and ALHE
- Brad Jackson, Community Programmer, Continuing Education and Extension
- Sharon Gibb, Credit Extension and Part-time Studies

- Dwight Lemky, Director, Media Production Services

Southern Alberta Institute of Technology, Calgary, Alberta, Canada.

- Diane Osberg, Head, Distance Education
- Jim D'Arcy, Assistant Head, Distance Education

14 November — Access Network, Edmonton, Alberta, Canada.

- Chuck Shobe, Director, Formal Learning

22 November — Simon Fraser University, Vancouver, British Columbia, Canada.

- David Porter, Coordinator, Tele-Learning Projects.

23 November — Commonwealth of Learning, Vancouver, B.C., Canada.

- Deborah Lagueux, Secretariat, Commonwealth of Learning, Vancouver, British Columbia, Canada

25 November — Open Learning Agency, Vancouver, B.C., Canada.

- Glen Farrell, President
- Ian Mugridge, Dean, Open University
- John Moore, Client Services Manager, Open College and Open University
- Karel Baresh, Senior Media Producer
- Dennis Kong, Communications Analyst

28 November — University of British Columbia, Vancouver, B.C., Canada.

- Ron Neufeld, Director, Distance Education Office, Faculty of Education
- Leroi Daniels, Centre for the Study of Curriculum and Instruction
- Ian Franks, Director, Guided Independent Study and Media Services
- Lorne Koroluk, UBC Access, Guided Independent Study

2 December — Knowledge Network, Vancouver, B.C., Canada.

- Megan Carvell, Project Manager
- Betty Mitchell, Manager, Institutional Programming

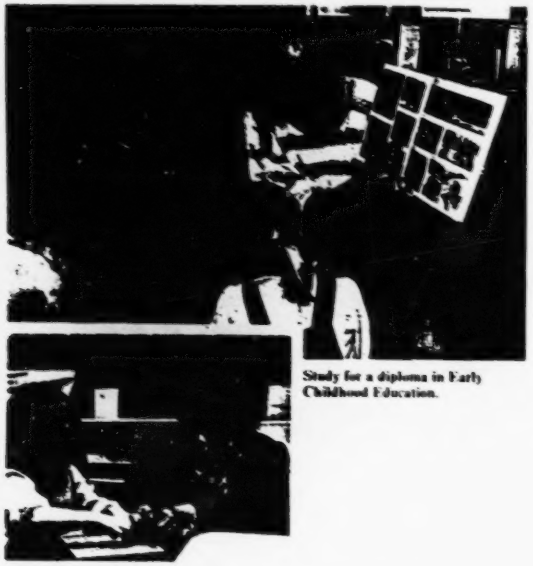
Appendix B

Maps of places visited

UNITED KINGDOM
SCOTLAND
Northern Highlands
Lake District
ENGLAND
WALES
Midlands
NORTH SEA

Canada
ARCTIC OCEAN
Axel Heiberg I.
Prince Patrick I.
QUEEN ELIZABETH ISLANDS
Ellesmere I.
C. Columbia
Melville I.
NORTH MAGNETIC POLE
Devon I.
Banks I.
Victoria Island
District of Franklin
Baffin I.
Boothia Pen.
Melville Pen.
Foxe Basin
Davis Strait
Cape Farewell
NORTHWEST TERRITORIES
YUKON TERRITORY
Dawson
Faro
Whitehorse
Norman Wells
Mackenzie
Great Bear Lake
Coppermine
District of Mackenzie
Yellowknife
Great Slave Lake
Fort Smith
Uranium City
District of Keewatin
Chesterfield Inlet
Southampton I.
Frobisher Bay
C. Chidley
Hudson Strait
UNGAVA PENINSULA
Ungava Bay
LABRADOR
NEWFOUNDLAND
Labrador City
Churchill Falls
Goose Bay
Hudson Bay
Dawson Creek
Peace R.
Lake Athabasca
Fort McMurray
Churchill
Nelson R.
BRITISH COLUMBIA
ALBERTA
Athabasca R.
Fraser R.
Prince George
Edmonton
Calgary
Vancouver
SASKATCHEWAN
Flin Flon
MANITOBA
Prince Albert
Saskatoon
Regina
Moose Jaw
Brandon
Lethbridge
Palliser Triangle
Winnipeg
Lake Winnipeg
Severn R.
Albany R.
Moosonee
ONTARIO
Lake of the Woods
Thunder Bay
Timmins
Hemlo
Sudbury
QUEBEC
Sept Iles
Anticosti I.
L. St. John
Gaspé Pen.
Gaspé
Quebec
Montreal
Ottawa
Toronto
NEW BRUNSWICK
NOVA SCOTIA
New York
COAST MOUNTAINS
ST. ELIAS RANGE
LAURENTIAN MTS
Rivière

Quality is high . . . The Distance Education Office gives you the same high quality of education you receive on campus. In fact, our courses are usually prepared by the very faculty members who teach the courses on campus. Upon completion you get full university credit, just as if you had attended lectures.



Study for a diploma in Early Childhood Education.

Standards are high . . . To enrol in courses offered by the Distance Education Office, you must have the same academic standing required for regular enrolment at the university. Consult the UBC Admissions Guide for details. And be prepared to devote as much time or more to studying at home as you would on campus.

It's practical and convenient . . . A UBC Diploma in Education qualifies you for valuable points in the T.Q.S. professional development rating system. That means tangible financial rewards. What's more, when taken through the Distance Education Office, the Diploma advances your professional standing with the least possible interruption of present earnings.

A Master Degree in your future? . . . Another advantage of the Diploma Program is that the courses you take may qualify you for admission to Graduate Studies.

Want more information? . . . If learning at home or in your community through UBC Access sounds appealing to you, call us or drop us a line. UBC Access. We deliver!

UBC Access Distance Education Office
Faculty of Education
2125 Main Mall
Vancouver, B.C.
V6T 1Z5
Phone: 228-2013

UBC ACCESS
DISTANCE EDUCATION OFFICE

EDUCATION

UBC ACCESS
DISTANCE EDUCATION OFFICE

Appendix C

UBC Access

A Diploma in Education?

Good Choice. The quality of our education system depends on teachers with special expertise.

Enhance your credentials at home . . . The Distance Education Office offers you the opportunity to upgrade your professional standing without having to travel to UBC's Vancouver campus. Study right in your own community and earn a Diploma in one of several program areas.

The diploma programs provide teachers with practical classroom skills.

Here's how it works . . . To earn a UBC Diploma in Education you need 15 units of course work: 6-9 units in your specialty, and 6-9 units of electives. And you have up to five years to get them.

You can combine home study with face-to-face instruction offered in your community, extra-sessional evening classes and/or summer session classes on campus to complete your program. Either way it's an attractive alternative to coming to campus full time for one year which is usually required for the Diploma.

The Distance Education Office may be just the answer for you. We send everything you need by mail, so you can get started on your Diploma with minimum disruption of your busy schedule.

Here's what to do . . . Consult the UBC Admissions Guide to determine your admissability to the university. Then contact us at the Distance Education Office. We'll direct you to the courses you need to meet the requirements of your Diploma program.

Here's what you get . . . Once enroled in a home study course, you'll receive a specially designed independent learning package containing all the materials you'll need. And most of our courses include television broadcasts on the **Knowlege Network** or video tapes. You may also choose to enrol in face-to-face on-site courses which consist of 4-6 sessions with instructors plus various combinations of teleconferences and video/print material.

Our schools need teachers who can help students with special needs.

Curriculum planning is essential to effective instruction.

Here's The New Way To Get Ahead...

OPEN LEARNING AGENCY

Open College • Open University
Knowledge Network

Good News!

Today in British Columbia there's a new way for you to get ahead in your career, your life. It's a system for building your skills and knowledge called "open learning."

As never before, BC colleges, institutes and universities have come together with new ways to help you get the education or training you need, wherever you are in BC, whatever your personal lifestyle.

Dozens of educational programs, hundreds of courses and other learning opportunities are now available to you -- more conveniently than ever before.

"I can study anywhere"

With open learning you can now:

- Learn at the time, place and pace that suits you best, through print, television, videotape or audiotape, or, in some cases, on microcomputer, with the assistance of an expert tutor or instructor.
- Mix and match study programs and courses offered by most BC post-secondary educational institutions, to custom tailor your learning to your needs.
- Accumulate credits for all your post-secondary education in a central "credit bank," and use those credits to help you qualify for the degree or diploma you want to earn.

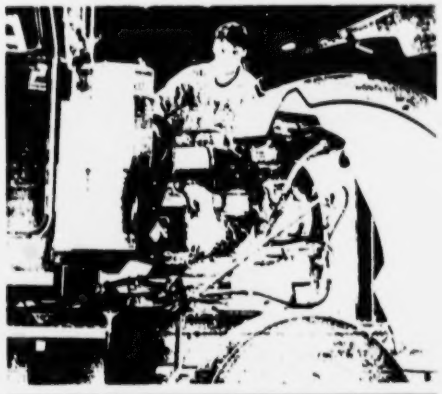
With open learning, many traditional barriers to education are eliminated. More than ever, your options are open.

It's the new way to get ahead. It's open learning!

This booklet will give you some ideas about open learning opportunities available in BC. We'll send you more detailed information, if you send us the request form on page 15.

With many programs and courses, you can begin right away. Course materials will be on their way to you just as soon as you register. You can get started as soon as you receive them.

"I'm upgrading my job skills with an Open College course in mechanics"



Partners in Open Learning

Colleges, Provincial Institutes and Universities are partners in open learning in British Columbia. The partnership includes the Open University, Open College and Knowledge Network which are exclusively devoted to delivering education by open learning methods.

The Open University offers courses leading to bachelors degrees, certificates and diplomas in many disciplines. It also acts as a coordinating body for university-level open learning throughout BC.

The Open College offers a wide range of college-level career, technical and vocational courses and programs leading to recognized certificates and diplomas. It also offers a high school completion program and English as a second language.

The Knowledge Network is BC's educational television service. It telecasts a wide variety of programs in support of college and university courses—and many outstanding children's and general interest educational programs.

Open Learning Programs

Open University Programs

Administrative Studies
- Computer-Based Information Systems
- Public Sector Management
- Administrative Studies

Applied Science and Natural Resources
- Communication
- Agricultural Sciences
- Engineering
- Forestry

Arts
- Specialization in: Biology, Criminology, Economics, English, Geography, Mathematics, Psychology, Sociology

Education and Adult Education

Health Science
- Nursing, Post-R.N.
- Professional Development
- Health and Fitness
- Gerontology

Human Services
- Child Care
- Social Work

Science
- Specialization in: Biology, Chemistry, Mathematics, Physics and Science Policy

Open College Programs

Business and Hospitality
- Business Management
- Small Business Management
- Office Administration
- Legal Secretarial
- Travel Counselling
- Restaurant Management
- Motel Management

Health and Human Services
- Dental Assisting
- Graduate Nurse Refresher
- Physiotherapy Re-Entry
- Social Service Worker

Technology and Trades
- Electronics
- Construction Supervision
- Industrial and Services Supervision
- Trades Upgrading for:
  - Automotive Mechanics
  - Carpenters
  - Electricians
  - Heavy-Duty Mechanics
  - Commercial Transport Mechanics
  - Millwrights
- Power Engineering
- Refrigeration Operation
- Industrial Health and Safety

Adult Basic Education
- High School Completion
- English as a Second Language

Knowledge Network

- Television components of selected university and college credit courses
- Non-credit general interest programs from many of the world's finest producers

How Does Open Learning Work?

You can register for both credit and non-credit courses. There are also many learning opportunities offered through Knowledge Network's general interest broadcasts. Either way, with open learning, there's no need to quit your job or alter your lifestyle to get the education you want.

If you register for a course from the Open University, the Open College or the Knowledge Network, learning materials will be mailed to you, and an expert tutor will be assigned to help you by telephone.

These are some of the tools for today's open learning. We use them to bring education to you.

Materials will include everything you need to complete the course:

- A course manual sets out objectives and contains basic information about the course.
- Course units, each usually representing a one-week or two-week block of study, present an overview, analysis and opinions on the subject, and exercises and reading assignments.
- Textbooks, readings, assembly kits and other necessary learning supplies are provided.
- Courses might include audio cassettes, lab kits, slides, color photographs, video tapes or computer software. Some courses have scheduled labs or classes, or supporting programs on the Knowledge Network.

Most courses are designed to be completed in two to four months. And at the end of most courses you write a final exam at one of 60 exam centres throughout the province.

You Can Do It!

Open learning does require self-discipline and determination. But success can be yours! As you finish one course, and then another, your confidence will grow. When you reach your goal, you will deserve all the credit.

Who Can Enrol?

Almost anyone over 18 is eligible to register for any Open College, Open University or Knowledge Network course, regardless of educational background or grade level attained. Some programs and courses, however, have specific pre-requisites.

How Do I Begin?

Use this booklet to help you decide on the courses or programs that interest you. Then call us at the phone number listed on page 14, or send in the request form on page 15. We'll send you the detailed information you need to get started.

Help is Available

Call or visit an advisor at one of the Regional Centres if you need help assessing your present credit standing and planning a realistic learning program.

Give Yourself Credit

Working with advising staff, you may find you already have educational experiences which can be credited towards the certificate, diploma or degree you want. They can be accumulated in the new BC Credit Bank.

Special Needs

Open learning provides a unique opportunity for learners with special needs. If you have a disability that might inhibit your completing a course of study, we will do all we can to modify course materials, tutorial services and facilities to accommodate you. Whatever your special needs and educational goals, contact our Special Needs Advisor at the Richmond Centre for knowledgeable guidance.

"We can custom tailor an open learning program for you"

Appendix E

The Open University of British Columbia

Introduction to the Open University

The Open University is a British Columbia public university which develops and acquires courses for delivery using open learning methods. It offers programs of study that lead to university degrees and other qualifications.

The Open University also acts as a coordinating body for open university learning throughout BC. You can enrol through the Open University in courses presented by all participating institutions. You may be granted credit towards an Open University degree for university level studies carried out elsewhere.

You can enrol in all the courses listed in this calendar through the Open University. You will note, however, that some courses are presented by SFU, UBC and UVic. When you enrol in these courses, you are treated during the course as though you were a student of that institution and are subject to its rules and regulations. The credit you receive is awarded by the Open University.

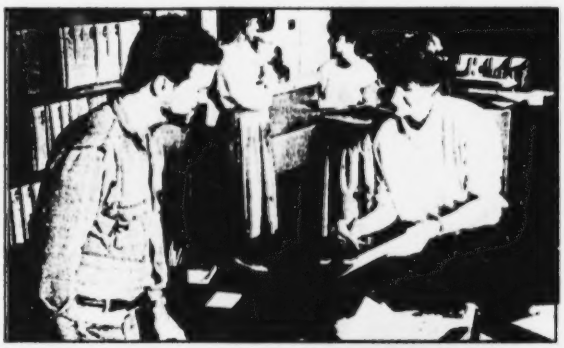
If you are taking a course presented by SFU, UBC, or UVic, you may encounter several different teaching techniques and administrative procedures. If you are taking a course presented by the Open University . . .

Here's how it works: Everything you will need to complete most courses is contained in the course package that is sent to you when you register—everything, that is, but the professor. But open learning doesn't mean learning in isolation: for every course you take, you are assigned a qualified and experienced **tutor**. Your tutor holds telephone "office hours" during which you may phone to discuss an assignment or to talk over any questions you may have about the course. You phone your tutor when you need to. As well, your tutor phones you for a few regular progress checks.

A week or two after you register for a course, you receive a welcome letter from your course tutor and your course package in the mail. A typical package contains everything you need to complete the course successfully:

- The **course manual** sets out objectives and contains basic information about the course, including what topics the course covers and how those topics are divided into units, how many textbooks there are, how many assignments you are required to write and when they are due, and suggestions about how to work through the materials.
- The **course units**, each representing a one-week or two-week block of study, present the course overview, plus analysis and opinions on the subject (much like what you would hear in a classroom lecture). The units direct your reading and studying and provide study questions and practice exercises.
- All the **textbooks** and assigned reading are included in your course package.
- Instructions for all the **assignments** you mail to your tutor are in an assignment file.
- Courses might include **audio cassettes, lab kits, slides, color photographs,** even **video tapes** and **software**. For some courses, support programs are broadcast on the **Knowledge Network television** or on **radio**. Some courses have scheduled labs or classes.

At the end of most courses you write a final exam (usually three hours long) at an exam centre near where you live. If you write all the assignments and pass the final, you get full university credit for the course, and your grade is entered on your university transcript.



Appendix F

Discovery Training Network

Introducing the Discovery Training Network.

Over 175,000 courses, workshops and seminars right at your fingertips.

If you've ever tried to find information on an educational or training course, you know how time-consuming the exercise can be. Now the Discovery Training Network can help.

The Discovery Training Network is a computerized catalogue that lists thousands of educational and training options offered by both private and public organizations. So now all the information you need is available at the push of a button.

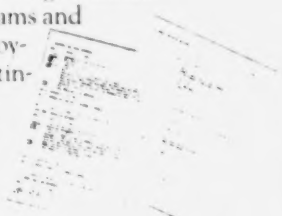
How the DTN service works.

You can tap into the Discovery Training Network by visiting your local TAP (Terminal Access Point), found in participating community colleges, government offices, libraries and many other locations.

When you visit your local TAP, all you have to do is specify the subject area that interests you and our computer will search out what's available. It's that simple.

What you'll discover.

Currently, you can access information on over 10,000 B.C.-based courses and programs, as well as over 165,000 independent learning courses, workshops, seminars and conferences from Canada and the United States. These listings include:

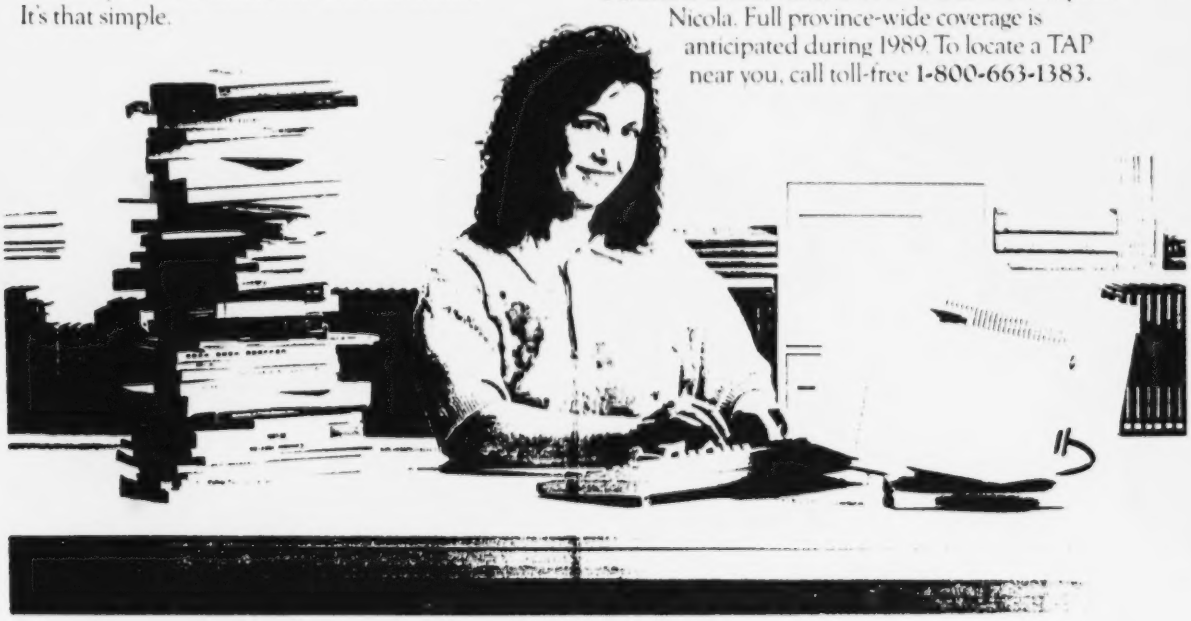


- Self-instructional programs and courses – including employment-based training, continuing education, professional development and academic credit courses.
- Public Colleges' programs and courses.
- Private Training Institutes' programs and courses.
- Educational Broadcast courses.
- Adult Special Education programs and courses.

And these listings are growing every day.

How to tap into TAPs.

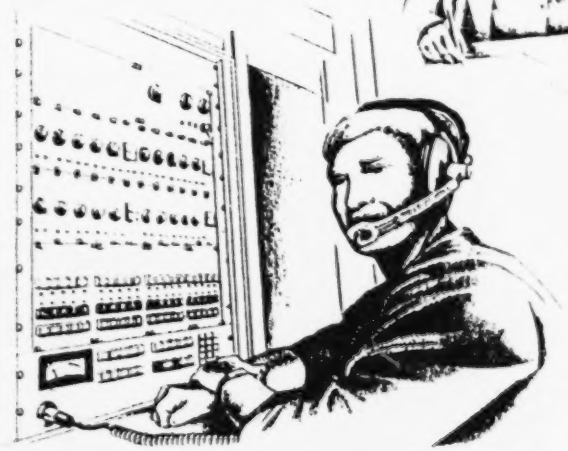
At present, there are TAPs in four regions of the province: Greater Vancouver, Howe Sound and the Sunshine Coast, Vancouver Island and Thompson-Nicola. Full province-wide coverage is anticipated during 1989. To locate a TAP near you, call toll-free **1-800-663-1383.**



Teleconferencing connects people

How does Teleconferencing work?

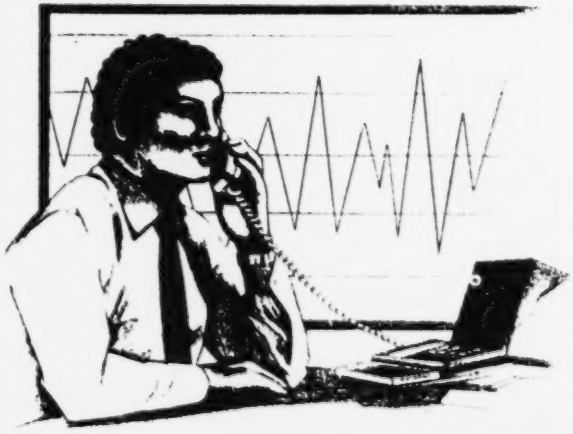
Participants are linked together when they call the Knowledge Network teleconferencing bridge. The bridge uses a voice activated switching system to permit up to 20 sites to communicate with each other. A site could be one person, a small group or a large group.



What are the benefits of using Teleconferencing?

Teleconferencing has a number of benefits for both the organization and the participant.

a. cost savings
b. greater participation
c. convenience for participants
d. immediacy
e. increased productivity
f. access to experts



How is Teleconferencing used?

Teleconferencing can be used for educational and non educational purposes.

a. courses
b. tutorials
c. workshops
d. seminars
e. administrative sessions
f. meetings
g. feedback updating sessions
h. conferences

Who can use the Knowledge Network Teleconferencing Service?

The Knowledge Network teleconferencing service can be used by:

a. educational institutions
b. government ministries
c. agencies of the province
d. non profit societies
e. professional organizations

What equipment do I need to Teleconference?

Participants can call from anywhere in the world that has a telephone line. Equipment can range from a simple hand held telephone or speaker phone to a more elaborate system complete with push to talk microphones.

What services does the Knowledge Network provide to Teleconference users?

The Knowledge Network staff can provide users with assistance in:

a. teleconference design
b. field development
c. participant training
d. equipment availability and use

Appendix H

DISTANCE EDUCATION BY TELEPHONE

Betty Mitchell

The Knowledge Network is using telephone and telephone related technologies to help instructors and off-campus students to communicate.

THE KNOWLEDGE NETWORK TELECONFERENCE SERVICE

Since 1984 the Knowledge Network Teleconferencing Service has been using the telephone to link instructors and students. In 1987 over 3,348 British Columbians took part in 436 audio teleconferences using the Knowledge Network service. Courses using audio teleconferencing were offered by The University of B.C., Simon Fraser University, University of Victoria, and Northwest Community College.

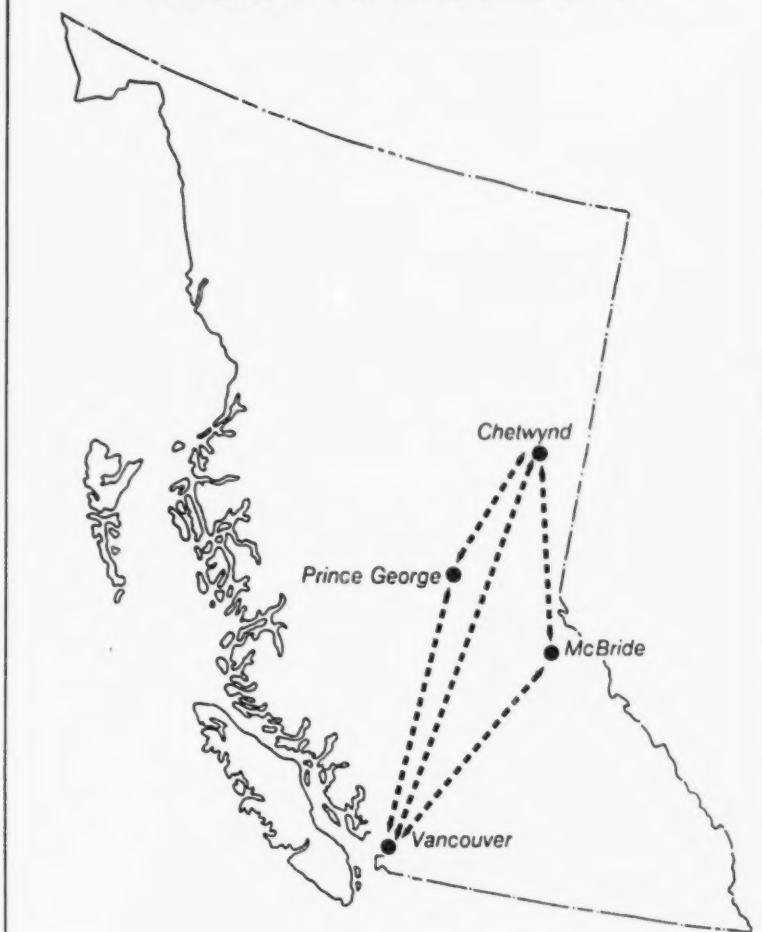
AN EDUCATIONAL LINK

Audio-teleconferencing is used for direct instruction, tutorials to supplement print or televised courses and for professional development activities. Universities and colleges in British Columbia use audio teleconferencing for a variety of courses including Public Adminstration, Education, Nursing and Criminology. Professional development programs by audio conferencing are offered by the British Columbia Health Association, UBC Continuing Education in the Health Sciences, The Certified General Accountants of B.C., and Continuing Legal Education.

AUDIO TELECONFERENCE TECHNOLOGY

At the Knowledge Network offices in Vancouver a switchboard or "bridge" can connect up to 20 sites for a class. A site could be an individual, a small group, or a large group. Participants can either call into the Knowledge Network bridge or the bridge operator can call out to participants.

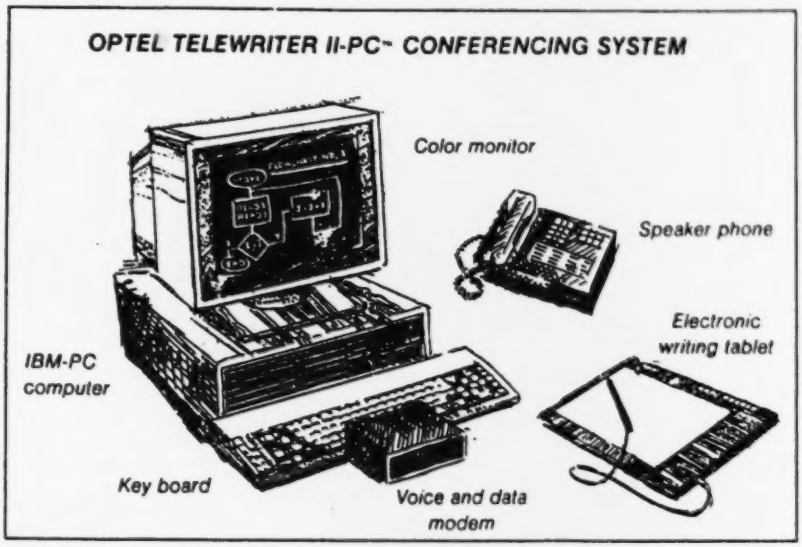
TELECONFERENCING CONNECTS INSTRUCTORS AND STUDENTS BY A SIMPLE TELEPHONE CALL



Once each site is ready the bridge operator links the lines together and the class can begin. Students and instructors participate in audio teleconferences from their home telephone or from work and off-campus locations by speaker phone, or a speaker box and microphone set that "plugs into" an ordinary telephone jack.

COMBINING COMPUTERS WITH AUDIO TELECONFERENCING

Computers can also take part in a teleconference. Modems are used so that computer signals can travel on ordinary telephone lines. These computer signals can carry data, graphics, and even pictures and



slides. The receiving computer(s) can display and store this information.

Can we combine voice and computer signals so that the instructor and the students can talk and send data and graphics to each other during their teleconference class? Since February 1987 the Knowledge Network has been piloting the use of the Optel Telewriter II PC system which acts as an "overhead projector" for distance education students.

The Optel Telewriter consists of an IBM PC, electronic writing tablet and pen, graphics software, and a modem that allows students and instructor to talk and send data, graphics, and writing simultaneously on a single ordinary telephone line.

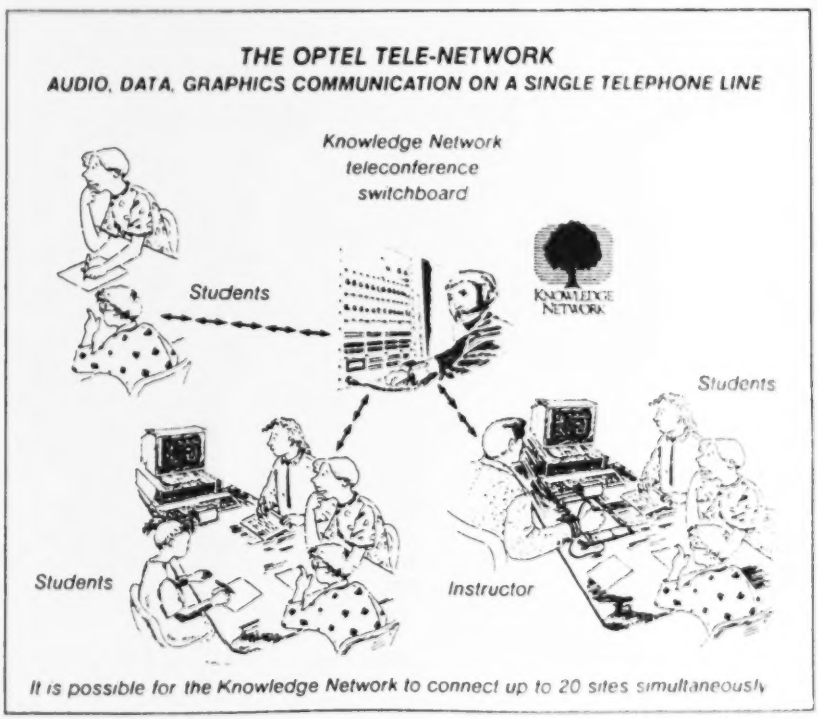
THE OPTEL TELEWRITER TECHNOLOGY

In preparation for the class the instructor and students can use the computer and any IBM PC software to create pages of data and graphics which they will use during the class session. These pages can be sent by telephone lines to all the sites participating in the class before the class begins and stored at each site computer, or can be transmitted while the class is connected together.

Once the Knowledge Network bridge operator connects the class together the instructor and students can talk and send data and graphics simultaneously to all connected sites.

The pen and tablet can be used by the instructor and the students to draw or point to information on the computer screen. By pressing the pen on the touch sensitive writing tablet participants transmit a signal by phone and the writing appears on the computer screens of all receiving locations. The instructor and students at each site can use the pen and tablet to write on the blank computer screen or to point or annotate on a pre-prepared screen of information. Each page including annotation which was transmitted during the class can be stored on the computers at each site for future reference.

Since February 1987 B.C.I.T. has used the Optel to teach a session on accounting spreadsheets to students in Merritt; University of Victoria has tested Optel in a computer programming tutorial; and Northwest Community College recently used the Optel for three months in their off-campus Adult Basic Education program. The Knowledge Network is currently working with the Correspondence and Distance Learning Branch to use Optel for Correspondence Grade 12 Physics and History tutorials for students in Prince George, McBride, and Chetwynd.


THE OPTEL TELE-NETWORK
AUDIO, DATA, GRAPHICS COMMUNICATION ON A SINGLE TELEPHONE LINE
Knowledge Network teleconference switchboard
Students
KNOWLEDGE NETWORK
Students
Students
Instructor
It is possible for the Knowledge Network to connect up to 20 sites simultaneously

Appendix I

TELECOURSES

Tune in and take credit! ACCESS NETWORK, The Alberta Educational Communications Corporation, in co-operation with Alberta post-secondary institutions, offers exciting learning opportunities. Obtain post-secondary credit with help from television and radio. Enroll with the supporting institutions, view the series on ACCESS NETWORK or listen to it on ACCESS NETWORK-CKUA AM•FM, and complete the required readings, assignments, and examinations. (Students receive complete course packages, including print support and assignments, from the supporting institutions. Tutorial support is also available.)

NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY 471-7427

TELEVISION

Starting a Small Business (XBH 106A)
—practicalities of setting up a small business
Thurs Sept 24 - Dec 17/Jan 7 - Jan 21
7 30 p m

MOUNT ROYAL COLLEGE 240-6833 or 240-6871

The Business of Management
(Business Administration 1130)
—the theory and practice of management
Mon & Wed Sept 14 - Dec 9 6 30 p m

GRANT MACEWAN COMMUNITY COLLEGE 441-4669

Tourism Is Your Business
[Financial Management for Small Business
BA288 0(70)]
—financial management for Canada s lodging industry
Wed Sept 16 - Nov 4/Nov 18 - Dec 9
6 00 p m

ATHABASCA UNIVERSITY 675-6148 (Athabasca)
Fort McMurray 743-1846 Edmonton 432-1550 Calgary 262-4522

TELEVISION

About Women (Women s Studies 267)
—the changing role of women and the impact this is having on society
Tues Oct 27 - Dec 15/Dec 29 - Jan 26
8 00 p m
Wed Oct 14 - Jan 6 1 00 p m

A Vous La France (French 103)
—conversational French for beginners
Sun Sept 13 - Jan 24 11 00 a m
Sat Sept 19 - Jan 30 12 30 p m

Canadian Government and Politics
(Political Science 309)
—introduction to political and governmental systems
Wed Sept 30 - Dec 2 7 00 p m
Fri Nov 27 - Jan 29 1 00 p m

The Planet of Man (Geology 231)
—introduction to the concepts and theories of geology
Sun Sept 13 - Jan 24 2 30 p m

Faces of Culture (Anthropology 275)
—cross-cultural anthropology
Sat Sept 19 - Jan 30 11 00 a m

Understanding Human Behavior I (Psychology 289)
—psychology as a natural science
Sat Oct 3 - Jan 30 11 30 a m

Understanding Human Behavior II
(Psychology 290)
—cognitive psychology
Sun Oct 4 - Jan 24 3 30 p m

Urban Change and Conflict (Geography 326)
—an urban studies course that compares the cities of Cracow, Birmingham, and Vancouver
Mon Oct 19 - Jan 25 7 00 p m

The World At War (History 367)
—an historical review of events prior to, during, and after World War II
Thurs Oct 1 - Jan 28 9 00 p m

RADIO

A Vous La France (French 103)
—conversational French for beginners
Tues Sept 22 - April 15 7 00 p m
Repeated
Tues Sept 29 - April 12 7 00 p m

Ragtime to Rolling Stones Series II
(Humanities 285/286/422)
—history of popular music—comprises two Humanities courses
Tues Oct 6 - Oct 4 8 00 p m
Sat April 9 - April 2 4 30 p m

Sur le Vif (French 242)
—First-year university French
Wed Oct 7 - May 4 7 00 p m

Allez France (French 361)
—Second year university French
Thurs Oct 1 - May 5 7 00 p m

ACCESS NETWORK—CKUA AM•FM

Province-wide — 580 AM
Athabasca — 98 3 FM
Banff — 104 3 FM
Calgary — 93 7 FM
Drumheller/Hanna — 91 3 FM
Edmonton — 94 9 FM
Edson — 103 7 FM
Fort McMurray — 96 7 FM
Grande Prairie — 100 9 FM
Hinton — 102 5 FM
Lethbridge — 99 3 FM
Medicine Hat — 97 3 FM
Peace River — 96 9 FM
Red Deer — 101 3 FM
Spirit River — 99 5 FM
Whitecourt — 107 1 FM

REGISTER NOW!

For further information and details on registration or credit, contact the appropriate institution.

ACCESS NETWORK

Available via cable & satellite dish. Check TV listings for channel designation.

Appendix J

MARIS-NET

MATERIALS AND RESOURCES INFORMATION SERVICE NETWORK

On-line information for training and education; providing the information you need; where you need it most; when you need it most.

MRI ON-LINE INFORMATION

MARIS-NET is the UK's most comprehensive on-line information service for training and education. Set up in the early part of 1983 with substantial funding from the Manpower Services Commission, MARIS-NET now holds a wealth of information in a number of databases—all of great value to the world of training and education.

MARIS-NET works for:

AnCO
Austin Rover
British Gas
British Institute of Management
British Steel Corporation
Consultative Group for
Training and Education in Agriculture
Ministry of Defence
Offshore Petroleum Industry Training Board
Rowntree Mackintosh
Stock Exchange
Thomas Cook
Trustee Savings Bank
and many more

Instant access through MARIS-NET is the most cost-effective and precise way to obtain accurate, up-to-date information to meet your training needs. Searching through our databases couldn't be quicker or easier.

MRI SELF-STUDY MATERIALS

This database has over 9,000 records relating to open and distance learning materials, correspondence courses, CBT, interactive videos and trainer resource materials. Searching it by subject is easy. The powerful on-line thesaurus helps you to select the precise term you need; it even copes with synonyms and mis-spellings!

You can also search it by supplier organisation and qualification, and your selection can be refined by a number of other criteria, such as study level, availability (we list materials in the course of production with a scheduled release date), format, cost etc. Once your search criteria have been met, you are presented with a list of titles. From this list you can choose to view four full pages of information on each record.

Just to show you how thorough we are, we have added other useful features to guide you smoothly through your search, such as colour coding and the option to 'step back' in your search or review your search parameters.

MRI PRIVATE SECTOR SHORT COURSES

Because of our continuing market research and our policy of responding to identified needs, we have set up a database which lists UK-based short courses on offer from industrial and commercial training organisations.

This is searchable by subject, mode of study, length of course, qualification, supplying organisation and the counties where the course may be attended. It can be refined by any combination of these.

At present this stands at around 3,000 records and is being added to daily. It will continue to expand in the months to come.

MRI ORGANISATIONS AND SERVICES

This database lists nearly 1,800 organisations and individuals offering products, services, advice and consultancy to the world of training and education. It is searchable by the type of service you are looking for and can be refined by subject or format, where either are relevant. Other search options are scheduled for the future.

MRI OPEN LEARNING BIBLIOGRAPHY

Open learning is here to stay and more and more people want to gain a better understanding of its concept and principles, and take advantage of its benefits. To put this information at your fingertips, we have developed the Open Learning Bibliography which contains over 1,200 textual references. It can be searched by subject and author, and it, too, has refinement options.

MARIS-NET

MATERIALS AND RESOURCES INFORMATION SERVICE NETWORK

Taking training and education into the future.
Giving you instant on-line access to vital information.

ELECTRONIC MESSAGING SYSTEM

When you subscribe to MARIS-NET, you get a free subscription to the electronic messaging system. This powerful communication tool gives you immediate access on-line to all other subscribers. You can send your own messages instantly, to individuals, or even establish your own distribution networks (closed user groups), and, of course, other subscribers can send valuable information to you.

WINDOW BOX

In addition to the databases and the electronic mailing system, you will find a number of static pages of information, news and advertisements under the general heading of 'Window Box'.

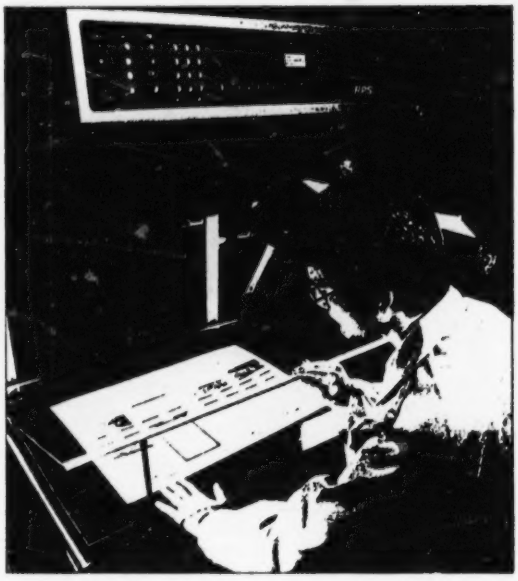
NATIONAL OPEN LEARNING LIBRARY

We have a library of open learning packages housed at Ely which you are welcome to visit by appointment.

WORKSHOPS

Because the system has so much to offer and we want to ensure that you use it in the most efficient and cost-effective way, we invite you to attend one of our monthly workshops. These take a full day and are designed to give you an in-depth understanding of the total MARIS-NET service and the opportunity to gain hands-on experience of searching the databases and using the electronic messaging system.

Once you have tried it, you will wonder how you ever managed without it.



TRAINING FILMS AND VIDEOS

MARIS-NET holds a file of over 1,000 training films and videos, which our staff can search off-line by request.

OFF-LINE SEARCHES

MARIS-NET also offers an off-line service. For a small fee, our staff will interrogate the computer on your behalf and send you print-outs of the result. Either write or telephone stating your requirements as precisely as possible and MARIS-NET will respond, usually within forty-eight hours.

HOST TO OTHER DATABASES

As well as owning and maintaining its own databases, MARIS-NET is a host system, which means that outside organisations (Information Providers) choose to use MARIS-NET to create a database for them on the MARIS-NET computer, maintain it and make it available to clients nominated by them. You will find, when you take out a subscription to MARIS-NET, your menu will show databases belonging to different information providers who have decided to make their training information available to all our subscribers.

- Rural Adult Training Database, owned by the Consultative Group for Training and Education in Agriculture. This is available to all subscribers at no extra cost.
- A database for the Institute of Training and Development with information specifically for the training of trainers.
- Training On-Call, a database set up for the National Health Service Training Authority (NHSTA). This will also be available to our subscribers at no extra charge.
- The MSC's Skills Training Agency has a database listing training courses and resources available through Skillcentres.

Training Access Points (TAP). MARIS-NET is one of the national databases being used by TAP via a Prestel 'gateway'. This is one of the very important Government initiatives designed to make public access to training information more easily available.

If you have valuable information and want to make it available on-line, either to your own subscribers, to MARIS-NET subscribers, or to the general public via Prestel, then MARIS-NET is the obvious answer.

MARIS-NET

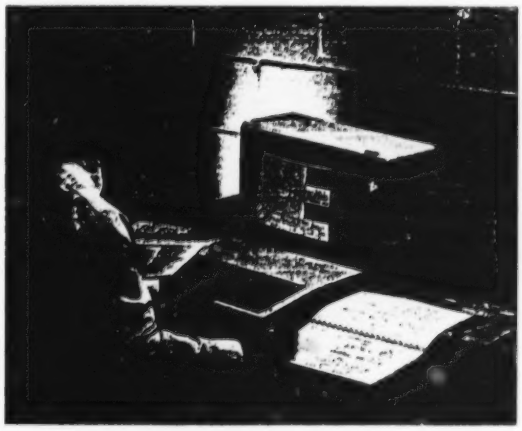
MATERIALS AND RESOURCES INFORMATION SERVICE NETWORK

Still taking training and education further into the future
Instant on-line access to even more information

In line with its policy of continuous improvement and expansion, MARIS-NET announces some important additions to its services, giving further valuable facilities to trainers and educators.

TRAINING FILMS AND VIDEOS

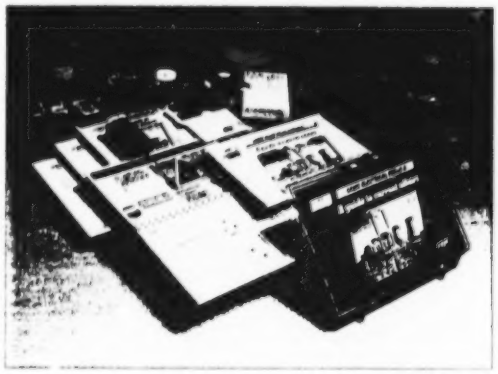
Until now, MARIS-NET has held a file of training films and videos enabling off-line searches to be made on request. This information, covering over 1000 records of training films and videos available for purchase, hire or loan throughout the United Kingdom, is now available as an on-line database. In addition, the database includes details of preview centres and a comprehensive list of producers and distributors of the films and videos.



CBT AND INTERACTIVE VIDEO

Computer based training and interactive video have become an integrated element of many of today's training programmes. Exciting and innovative advances being made in these rapidly expanding areas make the information available on this database an essential tool for all those involved in training and education.

This database has over 1000 records of all CBT and interactive video training packages currently available for purchase, hire or loan in the United Kingdom.



RESPONSE FRAMES

The incorporation of response frames in the Self-study Materials and CBT & Interactive Video databases heralds another step in MARIS-NET's policy of improving its services wherever it can. Response frames will provide searchers of the databases with a valuable communication facility of on-line contact with the package supplier. The searcher will be able to request further information on packages, order packages direct and to make comments direct to the supplier or producer. Response frames will soon be incorporated in other MARIS-NET databases.

MORE THAN JUST A DATABASE

MARIS-NET is already acknowledged as the most comprehensive on-line information service for training and education in the United Kingdom. Now, with the additions and improvements recently implemented, using MARIS-NET databases is an even more cost effective way of obtaining information so vital to training needs.

No longer is there any need to maintain catalogues and lists that so soon become outdated and are time consuming to use, even if you can find them when you need them. Using MARIS-NET databases is quick and straightforward, and above all else, you know that you have trawled all the information available when you carry out your search. Furthermore, because the databases are updated weekly, the most up-to-date information is always at your fingertips.

MORE INFORMATION COMES ON-LINE

MARIS-NET

NEW DATABASES FOR THE FUTURE

MARIS-NET (Ely) Ltd

Bank House, 1 St. Mary's Street, Ely, Cambridgeshire CB7 4ER
Telephone: Ely (0353) 661284. Fax: Ely (0353) 663279

Managing agent for Scotland and Northern Ireland:
Scottish Council for Educational Technology
Clyvarhill, 74 Victoria Crescent Road, Glasgow G12 9JN
Telephone: 041 334 9314

Designed and produced by Chapel House Presentation Management Limited. 061 872 4181

1 CURRICULUM DEVELOPMENT

Making School-Centred Inset Work

This pack, published 1985, has been used extensively in TRIST and GRIST programmes. It was in fact designed to support teachers and LEA's that wished to plan the development of their organization and curriculum. The change of INSET funding after 1987 means that many more individuals and organizations will need to undertake such programmes and the pack will have a new extended role. It will be particularly helpful to those teachers who are to be INSET coordinators whether schoolwide or in one curriculum area. The pack is concerned with the process of school-centred curriculum review and development, the pressures associated with it, ways of handling it and the possible reactions of those involved. The materials are intended to provide practical support for teachers who wish to work as a group in order to examine and improve any aspect of school life. They do this by offering a framework on a basis of which a practical course of action can be selected, examined, refined and implemented in relation to the users particular needs.

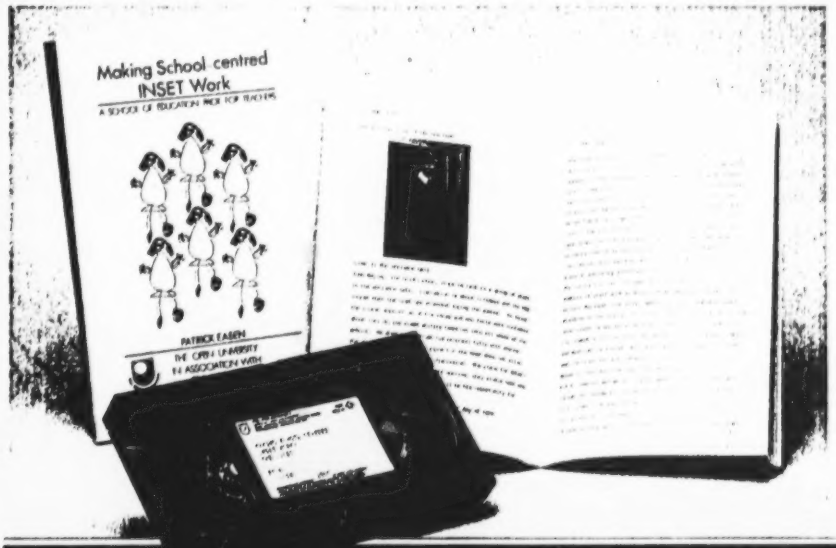
Study Pack – this consists of 3 components, all of which can be bought separately.

A) A book 'Making School-Centred INSET Work' which consists of activities and text to help with such aspects as problem definition and resolution, self-assessment, mutual support and group work.

B) An E60 video cassette 'Making INSET Work – The Video,' designed to stimulate group discussion of some of the issues involved in school-centred INSET.

C) A 'Guide for Group Leaders' which contains suggestions and further activities for organized INSET school-centred courses.

Study Pack	
P3133/0	Pack $39.00
Video Only	
P3136/9	Each $23.05
Book Only	
P3138/5	Each $7.95
'Guide for Group Leaders' Only	
P3137/2	Each $5.75



SPECIAL NEEDS IN EDUCATION

Teaching for Diversity: Preventing Difficulties in Learning.

This in-service pack is designed as a resource for all teachers whether remedial, learning support, class or subject teachers in primary, secondary or special schools. It provides a flexible 19 session course for small group work and is concerned with curriculum development school organization and support services. The pack provides examples of different approaches to teaching and the curriculum which should enable schools to reflect the needs, interests, backgrounds and abilities of all their pupils.

1. **Study Pack** – this consists of 2 components.

A) Study Guide – This is a loose leaf folder detailing activities for a 19 session course in areas such as remedial support, pupils' experiences of learning, co-operative teaching and supporting children with difficulties in learning within mainstream schools. The emphasis is on mixed group work with primary and secondary teachers learning support staff including parents and others involved in the education of pupils.

B) Resource Book – 'Preventing Difficulties in Learning: Curricula for All?' This book provides case studies and analyses the experience of pupils, teachers and others involved with difficulties in learning.

2. **Video Cassette** – a 2 hour VHS video cassette is also available either as a separate item or as part of the tutor pack below. The video cassette 'A Mainstream Approach to Preventing Difficulties in Learning' is divided into 8 short sequences which act as support to the work in the study guide. Indications are given of points at which to stop and discuss issues raised by the video and relate them to activities in the course. Discussion points are given in full in the Study Guide.

3. **Tutor Pack** – this consists of the Study Pack and the Video Cassette.

Study Pack	
P3150/5	Pack $16.75
Video Alone	
P3151/8	Each $30.45
Tutor Pack	
P3152/1	Pack $47.50

Every Child's Language – an In-Service Pack for Primary Teachers

This pack is intended to help primary teachers be better informed about children's language and about the policy and practice of other teachers.

Study Pack – this consists of 4 components:

A) A book outlining activities and topics to help teachers individually or in groups explore particular aspects of language and classroom practice.

B) A book outlining case studies written by practising teachers from all over Britain describing a wide variety of teaching approaches and activities.

C) An information guide with details of useful courses and resources in the field of language and primary education.

D) Audio Cassette – illustrating the language repertoire of primary school children in Britain which is referred to in the information guide. The material in the pack is suitable as the basis for a 1 or 2 term in-service course for practising teachers. However, its contents and organization make it also accessible and relevant to students in initial teacher training and to any of us concerned with education and the development of children's language.

Study Pack
P3135/6 Pack £15.75

Children, Language and Literature

This pack has been designed to help teachers develop their work with children and literature in the classroom. Children, Language and Literature can be used either by a group of teachers, e.g. as the basis for an LEA in-service course or by individuals working on their own. The pack is primarily intended for teachers of children aged 5 to 16 who want to be well informed about children's literature. It offers information and guidance on many aspects of literature work in school including discussions of contemporary issues and controversies in the world of childrens' books, case studies provided by practising teachers and a comprehensive up to date guide to sources and resources.

Study Pack – this consists of 4 components:

A) Book – 'Children, Language & Literature,' which outlines the role of literature in the classroom and looks at choosing childrens' books. This book includes specially written articles by childrens' book experts on important areas in children's literature, literature and language development, poetry, myths and legends, literature and social values, drama and the novel, literature and early reading, oral language and literature.

B) An up to date information guide 'Finding out about Childrens' Books' which includes information about sources, resources, bibliographies and useful addresses and organizations in the world of children's literature.

C) C60 Cassette which gives examples of story telling, dramatic improvisation by pupils based on a novel, oral literature created and performed by children and childrens' playground rhymes and games.

D) Cassette notes which highlight aspects of the relationship between spoken language and literature.

Study Pack
P3139/8 Pack £21.25

Appendix L

The use of electronic mail in distance education

BRUCE SCRIVEN
Brisbane College of Advanced Education
Kelvin Grove
Queensland, Australia

PREAMBLE

One of the most common problems faced by external students is that of isolation. This isolation from fellow students, teaching staff and the teaching institution creates problems which include delays in receiving feedback and difficulty in making contact with the right person to obtain answers to important questions. This can lead to high levels of student frustration and eventual drop out. Hence any technique which can reduce the feelings of isolation and improve communication between staff and students, or between students, is worthy of consideration.

One such technique is electronic mail. In the Australian context, Telecom's TELEMEMO service makes it possible to send or receive messages anywhere. All that is needed is an appropriate terminal with the ability to connect to the normal telephone lines.

This report provides some details and results of a trial use of Telememo by a selected group of external students enrolled at Brisbane C.A.E. in Semester 1, 1987.

SOME BACKGROUND FACTORS

Brisbane College of Advanced Education has approximately 1,600 external students, most of whom are teachers enrolled in courses at degree or graduate diploma level.

Telecom is Australia's national provider of telephone services. Telememo, Telecom's electronic mail service, has since been incorporated into an expanded service call Keylink.

Most external students of Brisbane C.A.E. are resident in Queensland, Australia's second largest state in geographical area, and its most decentralised. Many schools in Queensland already have access to Telememo and all regional education offices have been connected to the service. This implies that increasing numbers of teachers, particularly the more isolated can use electronic mail. The number of college staff gaining experience with electronic mail, including Telememo, is increasing. Because most, if not all, schools in Queensland are equipped with microcomputers, most of the college's external students have access to a microcomputer, although not all have access to a modem.

All students who enrol in the college's Graduate Diploma in Computer Education course must have ready access to a microcomputer. Such students also have a particular need for prompt answers to problems because even a small program "bug" can produce unacceptable delays in completing computer assignments or projects.

Staff involved in offering the Graduate Diploma in Computer Education course were not only keen to become more active users of electronic mail themselves, but were also keen to foster the use of the technology among all students, whether they were on campus or external.

Although staff were philosophically committed to the use of the new technologies where appropriate, there was understandable reluctance to make electronic mail an integral part of their teaching methodologies until they had answers to some key questions. For example:

- how many students would use it?
- how often would students use it?
- would the workload of staff increase or decrease?
- should there by any restrictions placed on the use of the system?
- how effective would the technology be in helping to remove fears of isolation?

and probably most important of all,

- how much would it cost?

The Co-ordinator of External Studies was a member of AOLIN (The Australian Open Learning Information Network) and was aware of the infrastructure that had been developed and of the assistance that was available to assist those wishing to experiment with electronic mail services.

ELECTRONIC MAIL — A NOTE

An electronic mail system involves the transmission of messages electronically rather than by post. Normally, electronic mail services make use of existing telephone lines. Subscribers to electronic mail services are provided with a mailbox which has been described as taking the place of existing office furniture! There are in trays and out trays for unread and read messages and files for storing received messages. There may be one or more bulletin boards that allow the user to reach, or be reached by, other users quickly and there is normally a "cabinet" for storing directories and distribution lists. There is even a "bin" for discarding unwanted messages.

The user of an electronic mail system myst have easy access to a computer or communications terminal. In practice, and for most users of such services in Australia, communication is via a microcomputer equipped with a modem and appropriate communications software. Messages may be sent directly via keyboard entry once connected to the system or they may be prepared off-line on disk and subsequently uploaded when on line. (This latter procedure is usually much better because it is cheaper since, in general, most of the recurrent costs associated with the use of electronic mail are a function of the time spent connected to the systems.)

Once connected to the system the user is advised of any mail that has been received. This may be read in full or scanned and, if necessary, retained on disk or printed out as hard copy. Similarly, the user can check any bulletin boards by scanning headings and/or by reading full messages. These too may be saved on disk or printed out as required. Messages may be answered immediately or may be saved for answering at some future time.

THE AUSTRALIAN OPEN LEARNING INFORMATION NETWORK (AOLIN)

AOLIN is an Australian based, independent and self-supporting network of groups and individuals with a common interest in the use of information technology for communication, teaching, research and administration at the post-secondary level. Members of AOLIN communicate with each other via Telememo. This service allows the exchange of electronic mail messages and telexes between those with access to Telecom Australia and to other national systems supported by Telecom. The three main objectives of AOLIN are to:

1. Facilitate personal development in information technology.
2. Act as a clearing house for information technology research, news and literature.
3. Support systematic evaluations of information technology.

Not only does AOLIN provide easy access to electronic mail facilities, it offers a number of other central services. These include:

- detailed on-line directory of members;
- a public bulletin board for announcements of general interest. (Any member can add notes to the bulletin board and outdated notices are removed by the board manager.)
- an electronic newsletter of educational research being undertaken in Australia and overseas;
- periodic computer conferences in which any members may participate;
- user training in the techniques and management of electronic mail and computer conferencing;
- a source of advice and assistance to members and potential members.

THE TRIAL

All 75 external students who were accepted for enrolment in the Graduate Diploma in Computer Education for the first time in Semester 1, 1987 were advised about the electronic mail trial. They were further advised that if they wanted to participate in the trial they had to contact the college, but only the first 20 to submit their names could qualify. Modems were available for hire at a nominal cost (AUS $25) for the semester.

Soon after the semester commenced 20 students had agreed to participate and 6 of these hired modems (and related software) from the college. As the semester progressed it became possible to add other students to the system so that by the end of the semester 22 were enrolled.

Participating staff, of whom there were 7, were enrolled in a separate division of AOLIN and the students were enrolled in their own sub division. (This sub division in turn could have been further divided into sections and subsections, but this option was not exercised.)

All participants were provided with comprehensive and detailed information about AOLIN and how to access the system and read, and store messages. Each user had his or her own individual mailbox secured by a password. In addition, two bulletin boards were established, one being accessible to both staff and students and the other being accessible to staff only.

Staff and students were given different user profiles which defined their access limits and the facilities available to them. One of the lecturers associated with the course accepted the position of system administrator whose task was to continually monitor system usage and make changes where considered necessary. For example, the administrator could restrict access to bulletin boards, limit those to whom messages could be sent or from whom they could be received, control storage of mail, purge

outdated information (storage costs money!), add and delete users, and exercise a number of other controls on the system.

One important privilege given the staff was that they were permitted to receive messages form, and send messages to, any mail box in the entire Telememo system, whereas students were restricted to use within the division only.

Because all external students enrolled in the course could not be included in the trial, care had to be exercised to ensure that those students not participating were not significantly disadvantaged.

In practice this meant that lecturers had to restrict their messages to those relating to the use of the system and to replies to specific requests. All messages relating to course content had to be initiated by students themselves.

In order to assist with the evaluation of the project, participants were provided with forms on which they were asked to keep details of messages received and sent and of the time spent on the system. They were also provided with a brief questionnaire to be completed and returned at the end of the semester.

RESULTS

Of the 74 students invited to participate in trial only 22 agreed to participate even though the deadline for the receipt of replies was extended. At the end of the semester the total number of students still enrolled was 46, indicating a dropout rate of 38%. However, only one of the 22 students participating in the trial had withdrawn. One can only speculate on the reasons but it cannot be assumed that participation in the trial reduced the likelihood of withdrawal. Perhaps it is more likely that the more enthusiastic and committed students were the ones who agreed to participate in the first place.

A questionnaire was sent to all students who did *not* participate in the trial and 12 responses were received.

The items posed and the responses were as follows:

i) The reason that I have not used Telememo is (Please explain briefly):

a)	lack of modem	7
b)	lack of access to computer	2
c)	modems supplied from college are not compatible with the Apple computer	2
d)	lack of courage to try something new	2
e)	I did not think it would help my study	2

Note: Some students selected more than one reason.

ii) Next semester/year I will/will not be using Telememo:

Will use next semester	4
Will not use next semester	5

iii) The following conditions have to be satisfied before I can use Telememo.

Three students indicated that they would wait until their school obtained a modem, but the majority were hindered by the financial and practical reasons, e.g. computer downstairs whereas telephone upstairs; using a friend's computer or a computer in a study centre; limited budget and cannot afford to hire/buy a modem.

The results of the questionnaire sent to those students who *did* participate in the trial are summarised below:

No. of participants	22
No. of responses	10

1. In general I found the use of Telememo in the subject of (please circle one):

Great help	4
Some help	6
Little help	–
No help	–

2. The area/s in which the use of Telememo was helpful is/are the following (please explain briefly):

Responses included: sharing ideas (6); providing quick and easy contact with lecturers (6); sending and answering pleas for help (3); sharing fears and concerns (1); solving administrative problems (1); having access to information 24 hours a day (1).

3. In my experience the degree of difficulty in the initial learning of the use of Telememo was:

Considerable	–
Limited	5
Negligible	5

4. The source of initial difficulty was the following area(s):

5 students experienced difficulty setting the initial software parameters. (This problem was related to the software provided with the modems hired from the college.)

2 students had difficulty understanding Telememo vocabulary and 2 students indicated they were just "apprehensive about talking to faceless people". One student experienced no initial difficulty.

5. In my opinion the use of Telememo for consideration purposes in the Graduate Diploma in Computer Education has a:

High potential	10
Limited potential	–
Low potential	–

6. The changes/extensions to the use of Telememo

that I would like to use in this course are the following:

Suggestions here included:
- introduce an ice-breaking exercise;
- provide examination information
- provide tutorial updates (?);
- provide hints and helpful bibliographies;
- provide regular weekly schedules with information;
- allow students to submit all assignments by Telememo;
- provide more detailed documentation on procedures.

One student wrote simply that it was "a great service".

Participating students were asked to record their pattern of use of electronic mail in a daily diary. This was meant to include such factors as time of the system, number of messages read and sent, destination and source of messages, and the nature of messages.

Unfortunately, only two students returned their diaries. (Perhaps the others were too busy to help them or did not appreciate their usefulness.) Despite this poor response it was interesting to note that —

a) Students spent between 15 and 45 minutes each week logged on to the system.
b) most messages were sent between students rather than between student and lecturer.

The lecturer responsible for the introductory Unit in the course received more than 50 messages from students and sent the same number, including replies to students. This was far in excess of the number of messages sent to, or received by, other lecturers.

COSTS

The table below provides some details concerning the patter of use of the electronic mail system and the costs incurred. Costs are in Australian dollars to the nearest dollar. Costs include storage costs and connect time costs.

In addition to the costs shown in Table I, the costs of AOLIN membership for the Semester was $150. Hence, if the unusual expense of $213 incurred by one lecturer is excluded, the total cost of the trial was $1065 which equates to an expenditure of $51 per student.

CONCLUSION

Electronic mail proved to be an effective supplement to the more widely used communication techniques in distance education.

Its use and potential were very much appreciated by those who were involved. The fact that students used the system to communicate with each other

TABLE I

Pattern of Use of Electronic Mail

	Feb $	March $	April $	May $	June $	Total $
Staff Costs	37	350*	131	70	29	617
Student Costs	1	126	185	138	61	511
TOTAL	38	476	316	208	90	1128
No. of Students who used Telememo	2	13	22	17	16	–
Max. Experience per User Student	0.80	22	32	22	9	–
Min. Expenditure per User Student	0.30	1	0.20	0.90	0.03	–
Average Expenditure incurred by Participating Students (22)	0.05	6	8	6	1	21
Average Expenditure per Participating Student (22)	2	22	14	9	3	50

** Includes $213 incurred by one lecturer communicating with others connected to Telememo, but not participating in the trial. These extraneous activities ceased soon after they were detected.*

more than with their lecturers should not be regarded as a disappointment, because it clearly would have assisted in reducing the sense of isolation experienced by most distance education students and can effectively be regarded as taking the place of the face-to-face interaction that occurs between students in traditional on-campus institutions. This factor alone may have contributed to the reduced withdrawal rate of the trial participants.

The trial indicated that electronic mail was a relatively inexpensive way of enhancing communications providing students have access to a computer, modem and appropriate software. However, until it is possible to ensure that all students have access to an electronic mail service, its use will be restricted. Its potential use as a transmitter of information or teaching material, or for providing tutorial and seminar support, and indeed for other functions associated with distance education will only be fully realised when all students and staff have the opportunity of linking in.